An Exploration of the Potential Contributions of the Alexander Technique to Piano Pedagogy

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Abstract

This study investigates to what extent a specific body-mind technique - the Alexander Technique - helps young Brazilian piano pupils to improve their approach to learning and their performance. The study took as its starting point a review of the literature on the Alexander Technique and on piano pedagogy, written in English and Portuguese, as well as a range of related and complementary literatures. Data was collected using several methods, including an experimental strategy with random allocation of pairs of pupils to experimental and control conditions (matched pairs), audio-visual materials, group discussions, written feedback from piano teachers and pupils, and semi-structured interviews with eight significant Brazilian piano pedagogues. A number of observers including doctors, piano teachers, general music teachers, Alexander teachers, and the researcher, studied and assessed the pupils' changes in physical, attitudinal, and performing aspects over a period of time.

Qualitative and some quantitative analysis of the observational data is undertaken, and possible explanations are suggested for the changes that occurred to the pupils' piano performance. The findings suggest that the Alexander Technique had a direct positive effect on the pupils' physical and attitudinal aspects and on their process of learning, and an indirect positive effect on their performances. Finally, the study proposes potential contributions of the Alexander Technique's principles to piano pedagogy, which could provide a more holistic approach to piano teaching and learning, leading to better performance standards and learning experiences for children.

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Introduction

Musicians confront many difficulties concerning the use of their bodies in performance. Physical, emotional, and mental requirements and effort, long hours of practice, technical challenges, and fear of failure in performance are factors that contribute to the emergence of postural problems, poor coordination, excessive physical tension and high levels of anxiety. Investigations have been conducted to advance discussion of these issues.[1] However, whether musicians' existing physical and emotional disorders may be increased by instrumental playing, or may emerge as a consequence of it, instrumental teachers in general do not pay special attention to these problems within the context of instrumental lessons. Perhaps they are not prepared to deal with such problems when they occur. Instead, instrumental teachers tend to focus on the final musical product, whatever this costs to students.

Dimon (1998) indicates the existence of many mind-body awareness techniques that can help musicians and students to prevent or deal with their physical and emotional difficulties. These techniques include psychoanalysis and psychosomatic medicine, body-oriented psychotherapy, yoga, meditation, oriental medicine, massage, chiropractic, osteopathy, and the Alexander Technique. The research undertaken for this thesis is intended to investigate whether or not the Alexander Technique may help

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[1] See Kemp, 1981; Craske & Craig, 1984; Fry, 1986a, 1986b; Watson and Valentine, 1987; Wolfe, 1989; Steptoe, 1987, 1989, 2000; Queiroz and Fonseca, 2000; Dawson, 2001: Warrington, 2002; Sakai, 1992, 2002.

young piano pupils to deal with, minimise, or perhaps overcome some of their problems.

My own background as a piano teacher and Alexander practitioner lead to the topic embraced by this study. In the 1980s, I had the opportunity to work as a music and piano teacher at the *Fundação de Educação Artística*, a private music school in Belo Horizonte, Brazil. Later, I exclusively taught the piano, and became Head of Piano at the *Villa-Lobos Núcleo de Educação Musical.* Concurrently, I started having Alexander lessons in 1986 with Ilan Grabe who introduced in Belo Horizonte the technique originally developed by Frederick Matthias Alexander (1869-1955). After many years of experience as a student and practitioner of the Alexander Technique, I joined the training course at the Constructive Teaching Centre in London, supervised by Dilys and Walter Carrington, and was recently qualified as an Alexander teacher (July 2003).

As a method of re-education of the use of human organism as a whole, based on a 'plane of constructive, conscious control', which guides pupils to 'a reliable plane of conscious activity' (Alexander, 1923: 105, 135), the Alexander Technique led me to profound and positive personal changes. As a consequence of these changes, my approach to piano playing and teaching were completely transformed. My own experience as a person, musician, and piano teacher made me wonder whether the Alexander Technique may help piano pupils to re-educate their bodies and minds, so that they can undertake their piano activity on a higher plane of constructive and conscious control. Some writers on Alexander have discussed the relevance of his technique to the work of musicians.[1] Research and small studies on this topic exist, and deal with the importance of the Alexander Technique for singing (Lewis, 1980; Lloyd 1986; Head 1996), flute playing (Bosch, 1999), string playing (MacCullough, 1996), piano playing (Armstrong, 1975; Santiago, 2001), and music education

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[1] For discussions on music and the Alexander Technique see Jones, 1968; Benham *at al.*, 1993a, 1993b, 1994; Graaff, 1994; Adams 1995; Alcantara 1997; Ben-Or 1988, 1991, 1995; Waterhouse, 1996, 2002; Stein, 2000; Mackie, 1994, 2002; Langford, 1994, 1996, 2003; Kratzert, 2003.

(Bonsaquet, 1987). Other pieces of research have investigated the Alexander Technique in relation to musical performance and stress (Barlow, 1959; Valentine at al, 1995). Musicians' informal reports on the effects of the Alexander Technique in their playing can be found[1]. Works on the Alexander Technique and children can be also be found.[2] However, studies specifically relating piano pedagogy and the Alexander Technique cannot be found. The present research intends to contribute to filling this gap.

The overall aim of the research is to investigate the potential contributions of the Alexander Technique to piano pedagogy. Through that, the research will be looking at the effects of the Alexander Technique on young piano pupils' performances. However, such an investigation cannot be focussed just on their playing, since performance itself depends on the agent who does the task. For this reason, pupils' physical, emotional, and mental capacities also need to be considered in this investigation. Therefore, the first aim of the research is to investigate the kinds of physical and attitudinal changes, as well as changes in performance, shown by twenty piano pupils in a private music school in Belo Horizonte, Brazil. In case changes in pupils' performance occurred, a description of these changes is required. The second aim is to explain why such changes happened. As a third aim, the research intends to understand how three aspects of each pupil, the physical, the attitudinal, and their piano performance, are related to each other. The fourth aim is to investigate whether the changes shown by the pupils in these aspects happened as a consequence of Alexander lessons or not. As a result of this investigation, some implications of the Alexander Technique's principles for piano teaching and learning emerge. The fifth and ultimate research aim is thus to call piano teachers' attention to pupils' difficulties (e.g. excessive physical tension and high levels of anxiety, etc.) and to reflect on the philosophical implications that the Alexander principles may have for piano pedagogy.

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[1] Musicians' informal reports by Clinton (the year of this report is not indicated in the document); Collins, 1968, 1978; Naylor, 1977; Rajna, 1974; Dobbs, 1981; Dennis, 1983 were found in the Carrington Archives.

[2] See Armstrong and Laub, 1984; Mathews, 1984; Nuttall, 1999a, 1999b; Merry, 2000.

The research project can be divided into four phases. The first phase incorporates a review of literature relevant to piano pedagogy, originally written or translated into English and Portuguese, since the researcher is a native Portuguese speaker and has command of the English language. This phase also incorporates a review of the literature on the Alexander Technique originally written in English. The intention of this phase is to understand the general context of both fields, their working principles, practices, pedagogical strategies, aims and concerns. Additionally, some intersections between piano pedagogy and the Alexander Technique are established, and criticisms of the limitations of piano pedagogy are proposed in the light of the Alexander Technique's principles. As this phase of research is on-going throughout the whole research process, other secondary fields are also investigated in order to fulfil the requirements of the analysis and interpretation of data: a selection of the research on instrumental practice and on other specific topics dealt with by music educators, as well as a selection of research on the Alexander Technique and music, and on musicians' physical disorders and performance anxiety. In addition, the study also investigated the work of the French physiotherapist, Marcel Bienfait (1995) and the work of Lowen (1882) and Keleman (1992) on psychotherapy.

The second phase of the project concerned data collection. The study used a variety of methods incorporating an experimental design (using matched pairs), audiovisual materials, interviews, questionnaires and group discussions. Additionally, the research triangulates the observation of the physical, attitudinal and performing changes shown by piano pupils, and includes the participation of different groups of observers - piano and music teachers, doctors, and Alexander teachers. The third phase was the presentation, analysis, and interpretation of data. The objective of this phase is to describe and explain the physical and attitudinal changes that occurred in the twenty piano pupils, as well as changes in their piano performances. The description of the events includes details drawn from the comments provided by the observers. Possible reasons for the pupils' changes in the three aspects are grounded in empirical data and early theorisation drawn from the literature review. As the data analysis focuses on qualitative strategies, an interpretative approach accompanies the entire process of analysis, with the inclusion of quantitative analyses at the end of the process. Finally, the fourth phase of the study deals with the practical implications that the research

findings may have for piano teaching and learning. It also discusses the potential philosophical contributions of the Alexander Technique to piano pedagogy. This phase of the study also points towards further research.

Eight chapters and a final discussion and conclusion form this thesis. Chapters 1 and 2 are devoted to the literature review. Chapter 1 deals with piano pedagogy. It focuses on the evolution of piano technique, definitions, pedagogical principles and approaches, practice, and piano teachers' and pupils' roles. In Chapter 2, the Alexander Technique is presented in detail. The Alexander Technique's evolution, definitions, principles and procedures, pedagogical approaches, and Alexander teachers' and pupils' roles are examined. Finally, a discussion of possible ethical issues raised by the Alexander Technique closes the chapter.

Chapter 3 deals with the physical and attitudinal problems that professional and amateur musicians may have, drawing on research on musicians' disorders and so-called 'performance anxiety'. It provides possible explanations for such problems, taking into consideration the view of human physiology provided by Bienfait, and Lowen's and Keleman's psychoanalytic views in connection with the ideas offered by Alexander. Musicians' reports of the effects of the Alexander Technique on their playing are also offered. This chapter also discusses the potential difficulties in performance that musicians may have, based on the literatures on piano pedagogy and the Alexander Technique. Thus the overall aim of the chapter is to combine both fields, the Alexander Technique and piano pedagogy.

Chapter 4 outlines the research process. It presents the research paradigm, and indicates the fields embraced to provide the theoretical orientation for the research. It describes the research design and justifies the methods used. It provides information about the piano pupils, the observers, tools and criteria of observation, and location of the empirical research. It deals with the problems of validity, reliability, and generalisability, ethical issues, and research limitations. Finally an overview of the data collection process, as well as the methods of data analysis is offered.

The following four chapters deal with the analysis of the data. Chapter 5 studies the piano pupils' physical changes, Chapter 6 investigates their attitudinal changes, and Chapter 7 examines improvements in their performance. These three chapters provide possible explanations for the pupils' changes in the three aspects. Chapter 8 compares the pupils' changes within groups, and examines the piano teachers' expectations concerning their pupils' improvements in performance. It also investigates other possible reasons for the changes shown by pupils in the three aspects. It concludes the process of analysis by presenting a summary of the research findings. The Discussion and Conclusion explore the implications of the Alexander Technique principles for piano teaching and learning, indicating how these may enlighten piano pedagogues' views. It also indicates the contributions of the thesis for piano pedagogy and for the Alexander Technique, and calls for further research.

Chapter 1

Piano Pedagogy

Introduction

This chapter reviews the classical piano pedagogy literature, including the writings of piano pedagogues who belong to different periods and countries. It also includes comments provided by eight Brazilian piano pedagogues who were interviewed by the researcher[1](details are provided in Chapter 4). Henceforth, both the piano pedagogues and the Brazilian piano teachers will be referred to as 'the piano pedagogues' or simply 'the pedagogues'. 'Researchers on instrumental practice' also play a part in this chapter, and will be named as such, or simply as 'researchers'. Additionally, the chapter discusses the difficulties of piano literature for readers, and offers a brief history of the evolution and definitions of piano technique. The common piano pedagogical principles are presented, as well as comments on piano practising, teachers' pedagogical approaches, and teachers' and pupils' roles.

1.1 Difficulties presented by the literature to readers

The literature on piano pedagogy presents various challenges to readers. They need to deal with the lack of a unified terminology, which may lead to misunderstandings and

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[1] Cançado (2002); Fonseca (2002); Gonçalves (2002); Grossman (2002); Hazan (2002); Menegale (2002); Paes Lemes (2002); and Rosselini (2002).

confusion. Whilst some pedagogues use the term 'singing tone' others prefer to adopt '*cantabile*'.[1] 'Holding-note exercises' appear in Levinskaya (1930) whilst an alternative term, '*tenuto*' can be found in other books (e.g. Fontainha, 1956). When pedagogues refer to different piano schools, things become more confusing. It takes time for the unprepared reader to realise that the 'finger school', the 'old method of finger technique', or simply the 'old methods' refer to the same kind of piano technique. In the same way, the 'natural school', the 'modern schools', and the 'relaxationist school' indicate similar piano technique.

The pedagogues' discourse is characterised by an individualist and eclectic tendency, lacking a theoretical centre, regarding content and format, which would unify their thinking (Lennon, 1996: 46-73). Besides, they embrace different pedagogical perspectives and opposed views on many aspects of piano technique and pedagogy, as confirmed by some pedagogues (Bolton, 1954: 55; Levinskaya, 1930: 20). Perhaps these differences occur because traditional piano pedagogy is considered to follow the 'apprenticeship model', in which teachers teach as they were taught by their masters (Lennon, 1996: 9-74). Throughout its evolution, piano technique and pedagogy incorporated contradicting methods, so many pedagogues have been under different pianistic influences. Thus the recent literature calls for a systematisation of the topics discussed by the pedagogues, to minimise the lack of theoretical focus, and to provide a common ground for understanding their main objectives, concerns, and limitations.

Some piano pedagogues present a complicated, unclear, and non-systematised style of writing, jumping from one topic to the other, which confuses readers. For instance, in just one paragraph Fontainha's (1956) comments move from hand position to phrasing, pedal, dynamics, repertoire, and sight-reading. Matthay (1931, 1960) offers another example of complicated writing style, with excessive details, interminable repetitions, recapitulations, terminology, summaries and footnotes, which make readers lose the focus and the meaning of many passages.

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1. For 'singing tone' see Lhevinne, 1972; for *'cantabile'* see Fontainha, 1956; D'Abreu, 1964: 60.

Prejudice and irony against woman as pianists is evident in some pedagogues' writings. Cécile Ousset (in Uszler, 2000: 367) provides an example of this prejudice; she herself suffered discrimination in her beginning piano career. Hoffmann (1910: 144) writes that 'of course, the greater numbers of eminent teachers are found on the masculine side'. Neuhaus (1973: 46) also provides an example: a girl who played Bach's C sharp minor Prelude did so 'with such excessively tender expression that instead of Bach, I saw a provincial lady playing a tear-jerking ballad'. Cooper (1975: 45) claims that piano playing is 'a domestic accomplishment more suited to the female…As women are supposed to be the weaker sex, they appear to try to overcome this defect at times by attacking the piano with more force than men, not always to musical effect'.

Talent is an issue discussed by many pedagogues,[1] and some show intolerance of less talented students. Neuhaus (1973: 18-19) for instance claims that he does not make any concession to satisfy 'weak' pupils, as to do so would mean a lack of respect for both teacher and pupil. The more 'stupid' pupils are, the less well they can manage a large-scale composition (Neuhaus, 1973: 48).

1.2 The evolution of keyboard technique

The literature on piano pedagogy reveals the existence of two main periods of evolution of keyboard technique: the pre-scientific period, which lasted from the 16th century until the mid 19th, and the scientific, from the mid 19th century on. In the pre-scientific era of keyboard technique, teaching had an empirical and subjective basis, embracing the early keyboard methods developed for the piano's predecessors, the harpsichord and clavichord (16th and 17th centuries), and the methods developed for the piano in the 18th and early 19th century. The typical harpsichord technique involves the action of the fingers and precise key attack, since this instrument requires

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[1] For discussions on talent see Leimer, 1933: 33; Letňanová, 1942: 154; Neuhaus, 1973: 60; D'Abreu, 1964: 24; Whiteside, 1961: 81-2, 105 and 1969: 26; Taylor, 1979: 18.

little force to pluck the strings and careful attention to articulation (Gerig, 1976: 9-10), arm involvement being a secondary matter.

The scientific era of keyboard technique is characterised by attempts to provide a more scientific basis for piano technique, and inaugurates the weight technique, introducing the use of the whole arm, and the concepts of rotation, circulatory movements, free and controlled falls. In this phase, the larger playing units should be considered previously to the smaller ones, and priority should be given to freedom of motion, and the use of arm weight (Uszler, 2000: 298).

Distortions and misinterpretations of both finger and weight techniques were introduced by some piano pedagogues. In the early 19th century, piano playing became more powerful, heaviness of touch evolved in order to meet the demands of the music of the period. The idea of keeping the arm still in order to produce finger strength was emphasised by some pedagogues, and mechanical systems of piano teaching were developed, in which the constant practising of exercises with stereotyped hand position prevailed (Fielden, 1934: 1-3). This led to excessive fixations of the joints without efficient muscular coordination (Gerig, 1976: 229-30). Finger-independence and strength deteriorated into stiffness and a harsh quality of touch (Levinskaya, 1930: 43).

On the other hand, some followers of the modern weight methods exaggerated and distorted its features (Levinskaya, 1930: 50; Gerig, 1976: 267). As some teachers abolished finger work altogether many pianists lost clarity of touch (Fielden, 1934: 10). Lazy and passive fingers, which just touch the keys without velocity of attack, are useless for piano playing, generating bad tone quality (Hazan, 2002: 17). Exaggerated arm movements, lack of sustained legato, lack of brilliancy and intensity of tone are weaknesses generated by excessive emphasis on weight methods (Levinskaya, 1930: 74). Besides, resting the weight of the arm entirely on the fingers overloads the forearm, wrists, and hands, and may even cause injuries (Grossman, 2002: 10). At the present time, however, the conflict between finger and weight

techniques is a historical one, and piano pedagogues can have a non-polemic view of the problem (Gonçalves, 2002: 4). Finger and weight techniques became 'technical resources of the well equipped pianist to deal with an eclectic repertoire', and the main factor, which defines a successful adoption of these technical resources is the degree to which they are applied (Gonçalves, 2002: 5).

1.3 Defining piano technique

The piano pedagogues do not offer one unique and clear definition of the concept of piano technique, perhaps because successful piano technique involves diverse and complementary instances of pianism and musicianship. Nevertheless, the statements offered by the pedagogues suggest that, at least, two opposite views of piano technique can be considered.

1.3.1 Piano technique and music as one indivisible entity

Pedagogues who hold one of these views believe that music and technique are one indivisible entity. As the word 'technique' comes from a Greek word meaning 'art', to some piano pedagogues technique is art itself (Neuhaus, 1973: 2; Rosselini, 2002: 3). According to Neuhaus (1973: 2), 'work at technique and work at music…it is all one'. If a pianist is working on technical problems, velocity, force, or accuracy should not be the main concern, but tone quality (Neuhaus, 1973: 2). Artur Schnabel (in Wolff, 1972: 22) stated that technique is the faculty of establishing channels between the sound heard inwardly and its execution; the present tendency in piano pedagogy, which emphasises the acquisition of technical skills, makes it difficult to achieve.

> This is mostly due to the fact the music and technique are to a large degree separately trained and developed, and that they undergo partly separate experiences…What we can work, for, however, is the elimination of mental-

> physical gaps by patient and disciplined training of all faculties, mental and physical, *together*. When there are gaps, the physical realization slips away from the mental image (Wolff, 1972: 22).

Others pedagogues agree with this view of piano technique. To Sandor (1981: 8) 'music and technique are indivisible', whilst to Taylor (1979: 90) art and technique go hand in hand. Matthay (1960: 3) claims that piano technique refers to 'the power of expressing oneself musically', involving all the psycho-mechanical means which allow pianists to express their musical perceptions. He goes on to say that:

> It is useless therefore to practise Technique as such... While trying to gain this technical equipment to express music you must unremittingly give close attention to Music itself. Not to do this is self-defeating and harmful... To try to acquire Technique (as in the past) without constant reference to music itself is just as stupid as trying to learn the use of the cricket-bat, tennis-racket or golf-club without reference to the ball! (Matthay, 1931: 3).

Later:

> ...you cannot learn Technique without learning to attend just like that - to Music. The worst crime in the past was to try to teach Technique apart from exercise in Music...If it is NOT Music, then it is not worth worrying over. A typewriter will serve as well. (Matthay, 1931: 53, 58).

Leon Fleisher (in Gerig, 1976: 4) states that pianists will decide which technical approach they should employ according to their musical ideas and to the desired quality of sound. Vladimir Horowitz (in Gerig, 1976: 4) says that technical perfection should be guided by musical approaches, and offers no recipes for the acquisition of technique. He also argues that:

> There is that technique, the ability to play scales rapidly up and down the keyboard, which is necessary, but which becomes very boring after two or three

> minutes of listening. [The piano] is capable of sounds which are loud and soft; but in between there are many, many degrees of sounds which may be played. To be able to produce many varieties of sound, now that is what I call technique, and that is what I try to do (Horowitz in Mach, 1980: 117).

Other piano pedagogues insist on a concept of technique which integrates the physical motor gestures and musical intention, that includes developing the essential aesthetic elements of pianistic execution in connection with pupils' musicality; and that considers musical understanding and previous musical conceptions as a point of departure for its development.[1] For instance, to Rosselini (2002: 3), technical matters should always be analysed according to the sound and the artistic images that pianists want to achieve, which are previously established in the pianist's mind. Hazan (1984: 13) complements this view, saying that piano technique is the knowing how to do, and the ability to faithfully translate into sounds the musical conception that is being internally idealised by pianists. Similarly, Menegale (2002: 15) says that technique needs to be related to music making and justified by a repertoire. The simplest musical piece should be studied as music, which requires specific 'technical attitudes' (Menegale, 2002: 15). All the aspects of piano playing (e.g. pedal, phrasing, tone quality, and dynamics) should be introduced from the beginning, in adequate proportions according to pupils' level of musical development (Menegale, 2002: 16; Hazan, 2002: 13).

Finally, Whiteside (1951: 25) summarises the view of piano technique and music as one indivisible entity: piano beginners' first approach to the piano should be a 'happy experience', and should deal with music itself rather than with verbal concepts; they must begin with the ear, not with the hand. She also writes that:

> By setting a finger technique without co-ordinating the whole mechanism of the body and involving the emotions, the teacher throws a wrench into the musical machine…The musical idea must be the stimulus that produces constant variation

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[1] See Fonseca, 2002: 5; Gonçalves, 2002; 7, 17; Grossman, 2002: 3; Hazan, 1984: 13; 2002: 13; Menegale 2002: 15-6; Paes Leme, 2002: 8, Rosselini, 2002: 3).

> in tonal intensity; the hands alone will never enable the pianist to do this, no matter how sensitive or expertly trained they are (Whiteside, 1951: 25).

Based on this view of piano technique, piano teachers would adopt a pedagogy in which the main motivation for the acquisition of a fine performance technique is music itself. Technical and musical skills would be developed together, from the beginning. However, other pedagogues have another understanding of technique, as will be seen below.

1.3.2 Technique and music as separate entities

Although stating that artistic expression is the main goal of pianists, some piano pedagogues' comments lead to the consideration that technique and musicality can be taken as separate entities. Hoffman (in Gerig, 1976: 1-2) states that technique corresponds to the material side of art, a tool which means nothing if the artist is not able to apply it for the best musical advantage. In a similar position are Fielden (1943), Leimer (1972, and Lister-Sink (1996). Fielden (1934: 123, 130) assumes that piano technique is 'a matter of muscular and nervous training', ' a knowledge of the physiological and mechanical conditions - a simple matter of continuous mental application'. To him, technique involves a 'measurable and tangible quantity'; when pianists have acquired control over their physiological apparatus, and have developed adequate technical equipment, they need to adapt these attributes to musical interpretation (Fielden, 1934: 162-3). Leimer (1972: 90) also defends the idea of technique as a mechanical/physical condition: to him, technique means 'controlling the fingers', and he seems to understand technique as 'fluency' and 'rapid execution of difficult passages and steady aim'. Lister-Sink (1996) considers technique as a basis for music making and provides visual example of how technique must be acquired through exercises. She seems to separate technique and music, as she declares that the transition from simple technical exercises to little pieces of music, which demand musical commitment, is 'tricky'.

The most extreme example of the separation between technique and music comes from Ching. Although he claims that the purpose of piano technique is to produce art (Ching, 1946: 7), he indicates a 'scientific approach to technique', a way of understanding piano technique as a collection of postures and movements (Ching, 1946: 16). Technical piano skills emerge from 'correct postures', 'correct movements, conditions and pressures' (Ching, 1927: 15). According to Ching (1946: vii):

> ...it is actually true that any normal individual is capable of achieving a standard of technique which will give him real pleasure and a sense of achievement if he is taught his technique as well as most people are taught to type... the purely technical aspects of piano playing, the ability to make the bodily movements involved in operating the piano keys efficiently is not to be gained by any reference to any questions of art, but only by reference to applied science, to the established facts of psychology, physiology and mechanics.

In his conception of piano technique, Ching separates technique and technical training. The technical aspects of piano playing would correspond to a kind of gymnastics that can be developed without any connection with music-making. Finally, Ching (1927: 16) recommends that:

> ...only by considering technique and interpretation as separate problems can either be adequately solved. Technique, therefore, is a separate entity and in its own right, so to speak, will henceforth be the primary object of our discussion and study... In short, the more impersonal and scientific we are in our approach to technique, the more personal and artistic is our playing likely to be.

So far, two opposite views of piano technique have been presented. The first one, which sees technique and music as one indivisible entity, offers a danger to piano teachers, as they may tend to emphasise the development of musicality and repertoire, and avoid the training of the basic and essential piano technical skills. On the other hand, the notion that technique and music are separate entities, may lead to technical training without reference to music, promoting a distance between the acquisition of technical skills and music making, and reinforcing mechanical practice for the sake of

technique. In due course, the present study will develop the view that technique and musicality should be developed hand in hand as much as possible. In Chapter 7, the study will also provide examples of the problems that emerge when technical skills are missing, and when lack of musical understanding occurs. For the moment, however, the complexity entailed by the concept of piano technique can be re-examined and better understood if we look at it in the context of musical training.

1.3.3 Piano technique in the context of musical training

Up to this point, the pedagogues associated several terms with piano technique, such as art, musical expression; velocity, accuracy and tone quality; technical skills, elements of technique, mechanics, technical equipment, standard, grade and perfection; control of the instrument, interpretation, and musical approaches. This range demonstrates that technique comprises many aspects, and the boundaries among these aspects are not clear, or perhaps are not clearly presented by the pedagogues.

Fanny Waterman (1983: 7-8) sheds light on this complex issue, considering musical training as a preliminary concept, and analysing its different aspects. She considers piano technique or 'craftsmanship' as one of the aspects of musical training, 'craft' being the mastering of every technical detail of piano playing, the way of learning 'how to do it' (Waterman, 1983: 7-8). Other pedagogues reinforce this point (e.g. Coviello, 1963: 43; Cançado, 2002: 6; Menegale, 2002: 15).

Together with technique, Waterman adds two other aspects that complement musical training: 'musicianship' and 'artistry'. Concerning musicianship, she writes:

> From the beginning, every musician must learn how to shape and colour a phrase; then how to play it in relation both to the next phrase and to the previous phrase; how to join several phrases together rhythmically so that a large section, an exposition or development, for example, is used together; and, finally, how to

> build together large sections to give the piece or movement rhythmic unity as one architectural whole (Waterman, 1983: 8).

Other piano pedagogues emphasise the importance of providing pupils with a good grounding in musicianship.[1] To Enoch (1974: 2-5), it is necessary to dedicate time to musicianship during piano lessons, and the improvement of technique should go hand in hand with musicianship. Lhevinne (1972: 9) emphasises the importance of providing pupils with such a grounding before considering the matters of technique. According to Neuhaus (1973: 14), Leopold Godowsky was first and foremost a 'teacher of music', a quality that only true artists possess.

Finally, Waterman (1983: 9) considers the third aspect of musical training, 'artistry', an innate quality, which is not taught, but encouraged. Artistic qualities are 'almost magical', and they are 'the hallmark of all great musicians', transcending the boundaries of age, class, language and race (Waterman, 1983: 9). Sandor (1981: 142) endorses this view: artistry and interpretation are intangible, superior skills that depend on a complete piano mastery and are revealed by an original, aesthetic, and personal approach to music. Conversely, other pedagogues affirm that there is a pedagogical way of approaching artistry. Last (1954: 33) suggests that artistry should be encouraged from the beginning, through the incorporation of technical and musical purposes in music-making, which requires pupils' imagination (e.g. sounds as illustrations of a mood or picture, using contrasts of legato and staccato and dynamics). Matthay (1960: 140) differentiates an artist from an artisan, the artisan being someone who plays passages loudly, quickly, and automatically, whereas the artist plays beautifully, instilling musical purpose and significance into each sound. So the emphasis on musical expression indicates a way of moving towards artistry.

Gonçalves (2002: 15) enriches the concept of musical training (piano technique in connection with musicianship and artistry), explaining that the development of technical skills is parallel with other 'functional abilities in the use of the keyboard'. The ten most essential skills are pointed out by Gonçalves (2002: 15) as follows: (1)

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[1] See Lhevinne, 1972: 9; and Neuhaus, 1973: 14; Enoch, 1974: 4, 52; Fonseca, 2002: 9; Hazan, 2002: 6-7; Gonçalves, 1986: v,vi and 2002: 10).

to play by imitation/play by ear; (2) to improvise/compose/make arrangements; (3) to have technical command of the keyboard; (4) to read music scores (sight-reading, ciphers, and reading the musical text); (5) to transpose; (6) to make accompaniments; (7) to harmonise; (8) to analyse; (9) to listen critically, to appreciate, and to reproduce; (10) to acquire and maintain a repertoire (solo and chamber music). However, as Gonçalves (2002: 16) clarifies, the acquisition of these skills is meaningless, unless they lead to the communication of musical expression.

1.4 Common piano pedagogical principles

The pedagogical principles presented below were not clearly stated as such by the pedagogues, but have been extracted and systematised from their writings on issues which recurrently appear throughout the literature of piano pedagogy. Although these principles cannot be generalised to all pedagogues, the approaches, ideas, and beliefs presented here reflect some of most important concerns of many of them, and coincide with the points raised by the pedagogues of other historical periods, as has been already indicated in the section of piano technique evolution.

1.4.1 A different and suitable approach for each pupil

Piano teaching methods derive from ideas and conceptions, and are planned according to a sequence of information and instruction that guide pupils into a cyclical practice of such ideas and conceptions (Gonçalves, 2002: 28). By degrees, piano teachers must work out their own methods, however keeping these flexible, to be modified when necessary (Bolton, 1954: 81; Hazan, 2002: 11). As pupils have individual physical, emotional, psychological, and spiritual features (Rosselini, 2002: 2), and all play the piano differently (Menegale, 2002: 13), the adaptation of piano teachers' method to

pupils' specific needs, age, abilities, and personal history, is emphasised by many piano pedagogues.[1]

Whiteside (1969: 76) writes that teachers cannot provide a definitive description of how a specific musical passage should be played, simply because people and occasions differ. Enoch (1974: 107) states that even in groups, teaching methods should be flexible, as groups are made up of individuals; different groups do not react in the same ways, or progress at the same speed. Finally, Matthay (in Last, 1980: 6) claims, '…I don't teach a method or a system, I teach common sense.'

1.4.2 Piano pupils' mental work and autonomy

The pedagogues emphasise the importance of training piano pupils to be independent and find out things for themselves.[2] Piano teachers should provide pupils with the basic musical knowledge (Grossman, 2002: 20), and from the beginning, encourage them to work towards the independent and autonomous use of the musical knowledge they already possess (Booth, 1946: 31; Menegale, 2002: 19; Grossman, 2002: 20). Kaplan (1987: 20,31) argues that pupils' mental training is more important than their physical training. Fielden (1934: 13) and Matthay (1960: 4) also emphasise the need for mentally grasping the technical processes by which music is executed in association with every musical effect. To Fielden (1934: 13), aural training and reading are two important ingredients of pianists' mental training: 'the ear should be able at once to hear what the eye sees'. However, Bonpensiere (1953) is the pedagogue whose method is entirely committed to the mental aspect of piano playing. He proposed the 'Ideo-kinetics' principles, which are not concerned with the training of pianists' physiological structures (although they are used in performance), but with the training of the musician's mind. In 'Ideo-kinetic' playing, writes Bonpensiere

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[1] See Hofmann, 1910: vii; Bolton, 1954: 19; Last, 1954: 81; Leschetizky in Gerig, 1976: 273; Cançado, 2002: 3-11; Menegale, 2002: 13.

[2] See Booth, 1946: 31; Bolton, 1954: 26-31; Coviello, 1963: 11; Neuhaus, 1973: 172; Grossman, 2002: 20; Menegale, 2002: 19.

(1953: 92), 'the mind can simply indicate a movement of definite periodic constant pattern'.

1.4.3 Progressive process of learning

Piano pedagogues stress the importance of a progressive process of learning the instrument.[1] Booth (1946: 22) claims that what pupils have hastily acquired will be lost in the same way. Therefore, there is no reason to be in a hurry for results. On the contrary, a 'step-by-step' approach (Booth, 1946: 25; Paes Leme, 2002: 6), 'from atom to atom' Hofmann (1910: ix), and the introduction of musical concepts in 'homeopathic doses' (Hazan, 2002: 6) are best in piano teaching and learning.

Wieck (1988),[2] Kaplan (1987), and Menegale (2002) also advocate that progressive learning is a *sine qua non.* In order to avoid future difficulties, all the elements of piano performance should be taught from the beginning and progressively (Menegale, 2002: 16-24). The difficulty of the execution of a specific passage is not found in itself, but in pupils' ability to execute such passage; so teachers need to respect pupils' motor evolution, not imposing tasks which go much beyond their possibilities (Kaplan, 1987: 55). Pupils should not be anxious to improve their performance abilities, but gradually include more demanding pieces in their repertoire (Wieck (1988: 124).

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[1] See Hofmann, 1910: ix; Ching, 1927: 38-62; Booth, 1946: 22-27; Enoch, 1974: 26; Hazan, 2002: 6; Paes Leme, 2002: 6.

[2] Original edition, 1853.

1.4.4 The development of good habits in piano playing

Kaplan (1987: 46) understands habits as results of the transformation of voluntary actions into automatic actions. The motor aspect of piano training is constituted of motor habits through which technique can be built up (Kaplan, 1987: 46). The task of changing faulty habits of physical coordination is a demanding one, as they become sub-conscious (Coviello, 1963: 15; Sandor, 1981: 188; Kaplan, 1987: 67-8). However, faulty habits can be changed with the employment of consistent attention (Whiteside, 1961: 98) and awareness of the cause of the fault (Matthay, 1931: 17).

Whiteside (1969: 22) explains that faulty physical habits prevent speed and continuity; to establish good habits of coordination pupils need to become aware of their own bodies, cultivating their perception of physical sensation. Finally, she asserts that:

> Habits, conditioned reflexes, are a formidable bulwark against any real change or even understanding of suggested new patterns of action by words on a printed page. The greatest help in effecting a change of habits comes from a frequent repetition of the sensation of the desired actions transferred from teacher to pupil (Whiteside, 1969: 31).

Whiteside (1961: 61) establishes an interesting relationship between the habits of muscle functioning, listening, and memory:

> Muscular habits in production of tone will determine the habits of listening and thus have a very definite bearing on stance on memorizing....Muscular habits which correspond to a continuous flowing rhythm are a constructive assistance to memorizing. They keep attention on the statement as a whole, and parts are assimilated that contribute to the meaning of the whole statement.

For all the reasons presented above, a number of piano pedagogues advocate the development of good habits of thought, observation, listening, sight-reading, coordination, concentration, and fingering.[1] In order to form good habits of 'thinking and doing', beginners especially need to be under the teachers' attention as much as possible (Hofmann, 1910: 36). Teachers need to introduce pupils to correct movements (Last, 1954: 25; 1980: 37), developing muscular habits that permit minimum effort and maximum efficiency in piano practice (Sandor, 1981: 182-3).

1.4.5 The adoption of good hand and sitting positions and posture of body

Concerning hand position, the pedagogues offer different opinions. Some emphasise the adoption of a curved hand position, with prominent finger-knuckles: the hand should assume an arched position from fingers to wrist.[2] A flattening of the knuckles should be avoided as much as possible (Leimer, 1933: 13; Paes Leme, 2002: 5). Pianists should not straighten the fingers, but play with the fingertips (Waterman, 1983: 18). Other pedagogues propose the use of a relatively flat hand position. Chopin adopted a slightly round hand, so that 'the fingers were not arched, but stretched a little, and leaned against the keys E, F-sharp, G-sharp, A-sharp, B and so on' (Letňanová, 1942: 105). Chopin's pupils state that, at many times, his hands were held absolutely flat (Letňanová, 1942: 112).

Some piano pedagogues argue that there is no such thing as correct hand position. They believe that the hands should assume a most natural position on the keyboard,

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[1] See Hofmann, 1910: 36, 57, 147; Matthay, 1931: 17; Santos, 1935: 111; Bolton, 1954: 28,31; Booth, 1946: 77; Coviello, 1963: 15, 26; Last, 1954, 1980: 37; Whiteside, 1961: 15, 43,48,61,98 and 1969: 22, 31, 36, 48, 51, 83; Enoch, 1974: 6; Sandor, 1981:188; Kaplan, 1987: 67-8; Grossman, 2002: 10-20.

[2] See Booth, 1946: 51; Enoch, 1974: 24; Fontainha, 1956: 47, 57; Last, 198:15; Leimer, 1933: 13; Waterman, 1983: 18; Grindea, 1995: 115.

the one that avoids stiffness and enables ease playing.[1] Hands and fingers need to adapt themselves on the keyboard according to their size and conformation (Matthay, 1960: 163), allowing the quick alteration of positions and movements (Neuhaus (1973: 101). Pianists can obtain the necessary sound effects according to their desire, and adopt diverse hand positions as required by musical compositions (Gonçalves, 2002: 9). For instance, as Letňanová (1942: 112) writes, a flat position enables *cantabile* melodies, whilst a curved position facilitates rapidity in playing. Supporting the adoption of mutable hand positions, the pedagogues emphasise the use of functional hands that work to their best advantage. Menegale (2002: 10) refers to 'hand attitude' instead of position, as the latter may suggest immobility.

The sitting position and the posture of the body also receive the pedagogues' attention.[2] Some pedagogues are concerned with the height of the seat, since it influences the position of the player in relation to the instrument (Hofmann, 1910: 4-5; Cançado, 2002: 12). There is an appropriate height for each pupil, according to her or his size, so that the arms and hands can be on the level of the keyboard (Enoch, 1974: 23; Fontainha, 1956: 43-46; Santos, 1935: 76). Other pedagogues emphasise a sitting position that emerges from good balance. As Matthay (1931: 46) suggests, a good sitting position does not assure a correct balance of the body, but depends on it, since balance occurs as a consequence of a correct application of the forces within the body. Cançado (2002: 12) states that postural balance has a direct relationship with the kind of tone quality that pianists produce; pianists need to find their 'axis', a balance of the trunk in relation to the seat, so that arms and legs are free to move as necessary during performance. Thus piano pupils need to adopt a sitting posture that facilitates movements without loss of balance (Last, 1954: 9), contacting the sitting bones (ischia) with the seat (Whiteside, 1969: 30), keeping the feet supported on the floor (Last, 1980: 17; Hazan, 1984: 14), and allowing free activity of the trunk

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1. See Lhevinne, 1972: 33-34; Matthay 1931: 49; Neuhaus, 1973: 101; Gonçalves, 2002: 9; Hazan, 2002: 5; Cançado, 2002: 13; Menegale, 2002: 10.

2 See Hofmann, 1910: 4,5; Matthay, 1931: 46,57; Leimer, 1933: 13; Last, 1954: 8 and 1980: 16, 39; Fontainha, 1956: 22, 44-5;

(Whiteside, 1969: 79; Enoch, 1974: 23; Lhevinne, 1972: 29; Hazan, 1984: 14). Sandor (1981: 155) adds that:

> In order to maintain balance and support the body, we often change the position of the feet and the head. The more interaction within the entire body, the more effortless and economical the playing becomes. When the body is totally involved in participating and the muscular action is totally distributed among its components, the performer hardly seems to be moving at all; yet he may play with lightning speed and produce thundering sounds (Sandor, 1981: 160).

Finally, Gonçalves (2002: 23) summarises some important aspects of the pianists' sitting position and posture. These include healthy postural conditions that do not interfere with breathing or digestion, that prevent spine disorders, promote elegancy of gestures, and avoid excessive physical effort; and good adaptation to the instrument, which results in physical comfort and reflects on music making. The comments above suggest that the adoption of good hand and sitting positions are essential in piano playing. However, Rosselini (2002: 19) reminds us that some pianists play well and artistically, even though they do not adopt the so-called 'good positions'. So it is risky to establish postural stereotypes in piano playing, as specific postures do not guarantee successful performance (Rosselini, 2002: 19).

1.4.6 The cultivation of freedom in piano playing and conscious sensation of movements

Freedom and ease of movement are foundation-stones in the development of piano technical skills (Matthay, 1931: 21; Last, 1954: 2; Fontainha, 1965: 90; Neuhaus, 1973: 91-2; Czerny,[1] 1982: 1). Flexibility of the joints is an essential attribute in the

[1] First edition, 1837-41?

development of free playing (Gonçalves, 2002: 19; Menegale, 2002: 3-4). Pedagogues highlight the importance of free wrists in performance (Lhevinne, 1972: 31; Paes Leme, 2002: 5-7); looseness at the shoulder (Merrick (1958: 68); and freedom in the knuckle joints (Sandor, 1981: 63). Others suggest that all segments of the arms (shoulders, wrists, hands) must be relaxed (Neuhaus, 1973: 91-2; Fontainha, 1965: 90). In sum, freedom in piano playing depends on the overall coordination and flexibility of the body. Freedom in piano playing also entails 'lack of physical restraint' (Last, 1980: 12), good muscular dissociation, and a constant alternation between conscious exertion of muscles and subsequent periods of rest (Leimer and Gieseking, 1933: 2; Booth, 1946: 59; Last, 1954: 83; Neuhaus, 1973: 129; Kaplan, 1987: 37; Fonseca, 2002: 4).

The development of physical sensation, also known as 'kinaesthetic senses', is essential in piano playing (Levinskaya, 1930: 246; Whiteside, 1951; Kaplan, 1987; Menegale, 2002; Grossman, 2002; Paes Leme, 2002). To Whiteside (1951: 25), physical sensations should be the starting point of piano playing and to the building up of mental concepts. Menegale (2002: 13-24-27) says that pupils' self-observation is vital, as they need to consciously recognise excessive muscular tension and internalise how it feels in order to be able to avoid such tension. This is what Kaplan (1987: 38) calls 'the practice of the sensations'.

Neuhaus (1973: 88) extends the concept of freedom in piano playing, pointing out its psychological component, and identifies possible causes of stiffness and strain in performance. In his words:

> Since confidence is the prerequisite of freedom, it is confidence that one should stubbornly strive for first of all...If such a person must become a pianist, it is essential to influence not only his physical but also his psychological make-up, in other words, to re-educate him as far as this is possible. (Neuhaus, 1973: 88).

1.4.7 The economy of movements and effort and avoidance of mannerisms

Another keystone in piano playing is the economy of movements and effort.[1] Grindea (1995: 116) provides a good reason why pianists should avoid unnecessary movement and excessive effort in piano performance:

> The muscular coordination of the human body is such that the slightest movement involves a whole chain of muscles, which have to contract, relax and balance at the precise moment, or reverse their action with the same lightning speed. Therefore, every pianist must practise economy of movement, avoiding unnecessary exertions and concentrate only on those essential to the performance.

Bach emphasised performance without excessive and exaggerated movements, and Mozart rejected artificial movements and mimicry or affectation (Letňanová, 1942: 99). To Czerny (1982: 32), 'graceful movements' are necessary in piano performance, but excess should be avoided. Touch is a matter of 'elimination of non-essentials', so that pianistic ends can be achieved through the simplest means (Lhevinne, 1972: 12), since unnecessary movements cause delays and spoil control (Menegale, 2002: 13). Ching (1927: 31) writes that 'a high degree of skill is always associated with an economy of movements'. Conversely, movements executed through great effort result from an inadequate muscular coordination (Kaplan, 1987: 32-3). Ortmann's (1925: 32-3) research reinforces these comments, showing that any extra motions made after the key has been depressed will influence the string. Matthay (1960: 16) and Sandor (1981: 143) point out that it is also essential to avoid excessive mental effort in piano performance.

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[1] See Ortmann, 1925: 32-3; Ching, 1927: 31; Leimer, 1933: 13, 58; Fielden, 1934: 82; Fontainha, 1956: 24, 35; Merrick, 1958: 96; Matthay, 1960: 16, 19-20, 108; Neuhaus, 1973: 92, 123; Lhevinne, 1978: 12; Sandor, 1981: 43, 47, 143; Czerny, 1982: 5, 32; Kaplan, 1987: 18, 32; Grindea, 1995: 116; Cançado, 2002: 13; Gonçalves 2002: 24; Hazan, 2002: 2; Menegali, 2002: 13; Paes Leme, 2002: 15; Rosselini, 2002: 4.

Other pedagogues complement the comments made above, providing examples of typical mannerisms of pianists, and explaining why they are negative and undesirable. The 'exaggerated facial contortions and grimaces' are in fact results of needless general bodily tension, (Grindea, 1995: 123); symptoms of poor and inadequate functioning of psycho-motor mechanism (Sandor, 1981: 227; Gonçalves, 2002: 25); or can be expressions of amateurism, revealing lack of self-control (Hofmann, 1910: 26). The avoidance of mannerisms does not mean, however, that performance should lose its power of expression. Mannerisms can also be positive, resulting from a well functioning, responsive and expressive way of playing (Sandor, 1981: 228), vivifying the output of an inspired pianist (Whiteside, 1961: 16). Besides, as Last (1960: 130) states, some high-level pianists are unable to play without bodily movements, which do not spoil their performances.

1.4.8 The cultivation of aural skills

Piano pedagogues discuss two aspects of aural skills: pupils' ability to listen to their own performance and pupils as musical listeners. Pupils' ability to listen to their own performance is emphasised by many pedagogues.[1] Coviello (1963: 11) points to a twofold route to better listening: 'internal listening' which allows students to imagine the ideal performance before playing; and an 'external listening', or listening to the sounds actually produced. Others reinforce the importance of hearing the music inwardly, imagining and conducting the music mentally (Neuhaus, 1973: 40; Kaplan, 1987: 80; Grindea, 1995: 109), and an 'internal sound world' (Grossman, 2002: 9). Internal and external listening must be blended together in such a way as to allow pianists to monitor the correspondence between their musical intention and execution. (Bolton, 1954: 26-54; Coviello, 1963; Schnabel in Wolff, 1972: 20). In this connection the ability to critically listen to one's own performance is a *sine qua non* (Leimer & Gieseking, 1033: 7; Bolton, 1954: 54; Czerny, 1982: 38; Paes Leme, 2002: 4).

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[1] Ben-Or, 1988: 12; Last, 1954: 53; Enoch, 1974: 46; Lhevinne, 1972: 12; Matthay, 1931: 6; Merrick, 1958: 1; Waterman, 1983: 15; Cançado, 2002: 3; Grossman, 2002: 9; Paes Leme, 2002: 4.

The importance of encouraging pupils to listen to live music is emphasised by some pedagogues (Fontainha, 1956: 33; Last, 1960: 117; Waterman, 1983: 36; Rosselini, 2002: 4). Piano pupils also learn a tremendous amount about music from recordings, which provides comparisons among different musical interpretations; if pianists and pupils have the chance to record their own performances they can also compare their own performances with other ones (Last, 1960: 117).

1.4.9 The cultivation of musicality and musical understanding

As Fonseca (2002: 9) explains, musical understanding involves awareness of how musical movement evolves through time, so that it can be performed as a musical narrative. Musical understanding depends on the formation of a previous sonorous internal auditory image of the music (Whiteside, 1951: 25; Kaplan, 1987: 58; Grossman, 2002: 7; Rosselini, 2002: 4). The clarity and precision of this image conditions the level of artistic execution and the effectiveness and facility of the learning process (Kaplan, 1987: 58; Grossman, 2002: 7). Fantasy and imagination are also essential in the construction of a sound image (Rosselini, 2002: 4). Finally, Cançado (2002) says that playing by ear is vital in the development of pupils' musical understanding (Cançado, 2002: 3-5). Hazan (2002: 14) states that some aspects of piano playing are abstract and cannot be taught, as they depend on the personality of the individual; but piano teachers can help pupils to develop their musicality and understand music if they deal with music's tangible aspects, such as musical character, tempo, form, dynamics, articulation, phrasing and pedal.

The common pedagogical principles offered above show that the pedagogues hope to provide pupils with good grounding in technique, musicianship, and artistry. Overall, most classical piano teachers probably adopt similar pedagogical principles. To confirm this idea, Chapter 7 will offer examples of the pedagogical principles adopted by the piano teachers who participated in this study, which largely coincided with the ones indicated by the pedagogues. The same chapter will also offer examples of the

most typical practising strategies adopted by those piano teachers, which again correspond to the ones offered by the pedagogues whose views are discussed below.

1.5 Piano practice

Piano pedagogues provide information on instrumental practice, and highlight its importance for the successful acquisition of music instrumental skills. A distinct body of literature, reporting research on instrumental practice, which has been conducted recently, investigates the topic in a systematized way. Whilst researchers deal with the kinds of practice, the practising strategies adopted by musicians, and the factors that influence their practice, piano pedagogues provide a collection of practising strategies and the components that form pianists' daily practice. Both, researchers and pedagogues, will be put side by side in the discussion below.

1.5.1 Kinds of practice, factors that influence practice, and practising strategies

Recent research distinguishes two kinds of instrumental practice. The first is referred to as 'deliberate practise'.[1] (Ericsson *et al.*, 1993). It involves a highly structure and task-oriented practice, where performance is carefully monitored to overcome difficulties and to achieve specific goals, resulting in improved performance (Ericsson at al, 1993: 368). On the other side of the spectrum lies 'playful practice'.[2] (Ericsson *et al.*, 1993), which includes enjoyable activities such as 'messing about', playing

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[1] Other researchers adopt corresponding terms, such as 'formal practice' (Sloboda *et al.*, 1996, Sloboda, 1996); 'effective practice' (Hallam, 1988; Pitts *et al.*, 2000), 'structured practise' (Barry, 1992; Costa, 1999), and 'formal practice' (Sloboda, 1996; Sloboda *et al.*, 1996).

[2] Terms such as 'free practise' (Barry, 1992), and 'play' or 'informal practice' (Sloboda *et al.*, 1996, Sloboda, 1996) correspond to playful practice.

favourite tunes from scores, and improvisation (Sloboda, 1996: 183; Sloboda *et al.*, 1996: 301).

Ericsson *et al.* (1993: 387) claim that expert performance results from the prolonged process of individual's skill acquisition mediated by extensive, but not excessive daily amounts of formal practice. Their findings show a strong relationship between the amount of time spent in deliberate task-oriented practice and musical performance achievement, which is endorsed by other researchers (e.g. Barry, 192l; Sloboda *et al.*, 1996; Nielsen, 2001; McPherson and Renwick, 2001; Hallam, 2001; Jørgensen, 2002). They also find a positive correlation between time used for formal practising and performance level.

Piano pedagogues also highlight the importance of deliberate practice, which entails discovering ways to overcome difficulties (Enoch, 1974: 75) and strategies to avoid excessive effort during performance (Leimer, 1933: 31). Practice must always be purposeful, understandable, productive (Ching, 1927: 4), and efficient, providing the best results with economy of time (Hazan, 1984: 23). Some degree of experimentation, which characterizes playful practice, is also endorsed by some pedagogues (Enoch, 1974: 75; Fontainha, 1956: 64).

Researchers indicate other factors which contribute to instrumental practising and final performance, such as an early start at the instrument (Ericsson *et al.*, 1993: 386; Jørgensen, 2001: 228-9, 2002: 108); individual differences (Hallam, 2001: 9, 16; Jørgensen, 1997: 26; Jørgensen, 2002:106); good musical instruction (Sloboda, 1996: 184; Ericsson at al, 1993: 372); parental support and motivation over the learning period (Ericsson et al., 1993: 366; Sloboda, 1996: 184; Hallam, 2001: 19); rest (Jørgensen, 1997: 31); level of musical knowledge and domain-specific abilities (Gruson, 1988: 100-1; Ericsson *et al.*, 1993: 383; Hallam, 2001: 20); concentration and attentiveness in learning and practice (Hallam, 2001: 13); planning of strategies in deliberate practice and self-regulatory learning strategies (Nielsen, 1999: 284 and

2001: 165; McPherson and Renwick, 2001: 169; Hallam, 2001: 13, 15); and increased levels of maturity and determination (Williamon and Valentine, 2000: 269)

Overall, researchers indicate a number of strategies for practice used by musicians, such as slow repetition with gradual increase in tempo; use of the metronome, with analysis of the musical score before playing; breaking down musical pieces into small units; choosing fingering before playing the music; silent and mental practice; tapping the rhythm; identification of mistakes when they occur and difficult sections which require more practice; repeating entire sections of the pieces; verbalising; and playing hands separately. The piano pedagogy literature also indicates a series of strategies, useful for the development of deliberate practice: the formation of correct practising habits from the beginning; the avoidance of mechanical practice and unconscious repetition and the adoption of a reasoned way of practising; slow practice; methodical daily practice without over-practising; the practising of new and old repertoire; practice with separate hands; and silent practice and practice in the dark. Rosselini (2202: 12) adds that:

> …when you learn how to practice, you have already learned everything you need to do. Knowing how to practice well and correctly is *per se* a victory. In the process of practising, we need to select and through this selection we develop our ability of self-evaluation…we need to stop and think about the objective we want to reach. We need to use the mind in order to discover the best way to achieve that objective. So practice involves creativity, intelligence, sensibility, it involves the entire person.

It is important for pupils to develop self-regulatory learning strategies, in which they actively participate in their own learning process (Nielsen, 2001: 156). Self-regulation involves the use of specific methods such as self-evaluation, setting specific goals, strategic planning, self-instruction, self-monitoring, and strategic practising. Researchers indicate that pupils who have learned to monitor their own performance and who possess self-regulatory skills are able to optimise their learning processes, and are likely to develop a more efficient and confident practising method (Jørgensen, 1997: 38; McPherson and Renwick, 2001: 169-70; Nielsen, 2001: 165).

Children do not tend to emphasise formal practising strategies (Gruson, 1988: 80; Pitts *et al.*, 2000: 53; Hallam, 2001: 97; McPherson and Renwick, 2001: 172-4). They tend to adopt simplistic strategies, such as repetition of the entire piece without using strategies for self-correction. Conversely, experienced musicians use more complex practising strategies; this indicates that musicians increase their ability to plan practising strategies according to their musical experience and knowledge (Gruson, 1988: 105-7; Hallam, 2001; 15).

Children should be encouraged to engage in balanced practice, involving both creative playful activities, and technical work and repertoire (Sloboda, 1996: 183; Pitts *et al.*, 2000: 54; McPherson and Renwick, 2001: 170). This is because children who became higher achievers tended to engage in playful practice more than those who ceased playing the instrument (Sloboda, 1996: 183), and because both kinds of practice are significant for the development of instrumental skills. Whilst deliberate practice seems to directly influence the development of technical skills, playful practice encourages the development of expressivity in performance (Sloboda *et al.*, 1996: 289). Additionally, enabling pupils to acquire a varied choice of deliberate practising strategies makes for more effective and faster learning (Costa, 1999: 65). So 'making progress on the instrument should not be seen as the only practice goal: musical understanding and cognitive processing must also be allowed to develop, so that learning can be independent and ongoing' (Pitts *et al.*, 2000: 55).

1.5.2 The contents of piano practice

Piano pedagogues describe what pupils should practise regularly, which includes fingering, pedalling, sight-reading, technical fundamentals, touch, repertoire, and techniques of composition. They also mention playful practises (improvisation, composing, playing by ear).

1.5.2.1 Fingering

Overall, piano pedagogues consider that a good choice of fingering is essential to optimum performance. Good fingering provides comfortable movements (Hazan, 2002: 26), enhances muscular memory (Bolton, 1954: 70), and is an aid to technical ability (Last, 1954: 93). Patterns of fingering need to be learned (Rosselini, 2002: 15), but fingering is also a matter of experimentation (Merrick, 1958: 35; Rosselini, 2002: 15). The variety of fingering depends on individual needs (Fontainha, 1956: 82; Neuhaus, 1973: 145; Waterman, 1983: 14; Cançado, 2002: 15; Rosselini, 2002: 16). It also depends on musical conceptions (Hazan, 2002: 26; Rosselini, 2002: 16); phrasing (Bolton, 1954: 70; Last, 1954: 84; Coviello, 1963: 23-4); and musical spirit, character and style (Neuhaus, 1973: 142). Incorrect fingering may cause difficulties in the mastering of easy passages (Fontainha, 1956: 81), or even the failure of a whole musical passage (Czerny, 1982: 24). It can also lead to unnatural positions of the fingers on the keyboard (Last, 1954: 93). Wrong fingering needs to be rectified in the light of logical explanation (Bolton, 1954: 70) and the appropriate one needs to be written down on the score from the beginning (Cançado, 2002: 15).

1.5.2.2 Pedalling

The German theorist Martienssen (in Letňanová, 1942: 122) categorises the three functions of the sustaining pedal: acoustic (promoting better quality of tone); connecting (promoting the illusion of legato); and harmonic (allowing the prolongation of tones). Good pedalling requires meticulous study (Lhevinne, 1972: 46; Fielden, 1934: 142) and good taste, musical sensibility and experience (Santos, 1935: 91). There are no fixed rules for pedalling (Lhevinne (1972: 46) and no correct pedalling (Neuhaus, 1973: 163). What is appropriate for one composer is completely inadequate for another (Lhevinne, 1972: 47; Neuhaus, 1973: 163).

Excessive use of the sustaining pedal is a common fault, and happens as a result of pupils' taste for its rich tone quality and their uncritical listening to their own playing (Coviello, 1963: 38). Bad pedalling results in loss of accuracy and of melodic and harmonic transparency, bringing about bad habits, increasing the performers' imperfections and wrong notes, and producing resonance that confuses the ears (Santos, 1935: 91). Santos (1935: 91-2) and Enoch (1974: 71) suggest that piano pupils should postpone the use of pedal. The former states that pupils should be allowed to use the pedal only when the piece is technically perfect, so that pedalling only takes part in the 'dynamic-expressive interpretation' (Santos, 1935: 91-2). The latter claims that the use of the pedals may be delayed until the second year of training, or when pupils are tall enough to reach them without spoiling their posture (Enoch, 1974: 71). Menegale (2002: 15) disagrees with this view, saying that 'pedal is not a marshmallow, added after the music is learnt; it is part of the instrument and should be practised from the beginning.

1.5.2.3 ` Sight-reading

Piano pedagogues call attention to factors that favour the development of good sight-reading: good rhythmical sense (Whiteside, 1961: 8; Cançado, 2002: 16; Hazan, 2002: 28); the ability to hear music internally (Merrick, 1958: 88), general musical knowledge (Hofmann, 1910: 17; Paes Leme, 2002: 10; Hazan, 2002: 28; Rosselini, 2002: 16); good technical skills (Cançado, 2002: 16; Hazan, 2002: 28); and good concentration and memory (Rosselini, 2202: 16);

Good sight-readers look at the score instead of at the keyboard or hands (Last, 1954: 82; Czerny, 1982: 8; Merrick, 1958: 89; Hazan, 2002: 28); they do not stop because of mistakes (Hofmann, 1910: 17; Hazan, 2002: 28); and they read the bars ahead (Cançado, 2002: 16; Hazan, 2002: 28). They are not worried about playing all the notes, but summarise the musical text (Hofmann, 1910: 17), leaving out details, and getting a general impression of the whole piece (Neuhaus, 1973: 34; Enoch, 1974: 45; Cançado, 2002: 16; Hazan, 2002: 14). They also avoid note-to-note musical playing (Merrick (1958: 89; Grossman, 2002: 16; Menegale, 2002: 19); they include all the

expressive elements of performance in their reading (Bolton, 1954: 51; Grossman 2002: 16; Menegale, 2002: 19). Thus, mental work before reading the piece is valuable: pupils should look at the score and make musical sense of it, observing the musical details, rhythm and melodic movements, tempo, and tone quality required by the piece (Grossman, 2002: 16).

1.5.2.4 Technical fundamentals

Technique can be broken down according to the fundamentals that make up any particular piece of music, and can be applied to different music styles. These fundamentals provide a basis for the development of pianistic formula (Hazan, 2002: 1; Fonseca, 2002: 5-6). Overall, piano pedagogues recommend training to play one single note, sequences of five notes, thumb passages, double notes (thirds, sixths, etc.), scales, arpeggios, jumps and dislocations, trills, octaves, chords and broken chords, tremolos, glissandos, ornamentation (mordents, appoggiaturas, etc.), and *tenuto*. They do not comment on other technical fundamentals adopted by composers during the 20th century and now, such as clusters and string glissandos.

Many pedagogues consider that methods which include exercises and studies are important tools for developing technique.[1] Specific exercises can also be designed by teachers in order to help pupils to solve their specific difficulties (Enoch, 1974: 41-45; Hazan, 2002: 2). Others, however, question the time spent on studies and exercises. Leimer (1933: 50-1) claims that, although necessary to some extent, they are practised more than necessary, and advises students to practice only a few studies until they are perfected. D'Abreu (1964: 33) states that a study which is learnt 'as an aid' to specific pieces should be avoided; instead, it would be better to choose another piece of music

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[1] For discussion on the topic see Hofmann, 1910: 46; Wieck, 1988: Czerny, 1982: 9; 96; Bolton, 1954: 65; Bolton, 1954: 62; Fontainha, 1956: 25-97; Waterman, 1983: 11; Fonseca, 2002: 21; Hazan, 2002: 2; Paes Leme, 2002:16.

which can easily replace the study. Grossman (2002: 7) states that methods of piano technique are not essential, as piano students will find the motivation to develop their technique in the vast and rich piano repertoire available to them. Finally, Menegale (2002: 4) states that technical exercises may be a waste of time, and even prejudicial, if practised wrongly.

1.5.2.5 Touch

Touch refers to the manner in which a pianist attacks the keys, and operates through different grades of the tone contrast (loudness or softness), and articulations (e.g. legato and staccato) (Levinskaya, 1930: 199; Matthay, 1931: 49, 1960: 150; D'Abreu, 1964: 58; Sandor, 1981: 3; Grossman, 2002: 12; Gonçalves, 2002: 26). Ortmann's (1925) research on the physical basis of piano touch finds that there are two basic kinds of touches, from which all the others derive: percussive and non-percussive. Percussive touches are produced through the fingers' striking the surface of the keys, so there is no gradual addition of weight, and key-control depends on the speed with which the fingers reach the keys (Ortmann, 1925: 20-2). In the non-percussive touches, the fingers rest on the key-surface, generating sound from pressing the key down, which allows refined control of key-movement (Ortmann, 1925: 20-2). Hazan (1984: 14; 2002: 10) says that pianists should emphasise the use of non-percussive touches, as they are produced with less effort, allowing more control of the instrument; however, percussive touches are also important and need to be trained.

Ortmann (1925: 26) also states that difference in the quality and intensity of tone are provided by the speed of key depression. Once the key is depressed, any further movements will influence the string (Ortmann, 1925: 32-3). So what pianists can control in tone production is speed and intensity. Many piano pedagogues agree with Ortmann's findings.[1] Finally, the pedagogues call attention to the artistic side of

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[1] See Coviello, 1963: 57; Booth, 1946: 6-7; Fielden, 1934: 98-9; Levinskaya, 1930: 199; Matthay, 1931: 5; 1960: 7; Newman, 1952: 79; Sandor, 1981: 7; Whiteside, 1961: 18, Menegale, 2002: 24; Hazan, 2002: 15).

touch, indicating that the search for correct tone production and diversity of touch is essential for pianists in approaching different musical styles, and are thus part of all phases of piano learning (Letňanová, 1942: 6; Merrick, 1958: 81; Wieck, 1988: 60; Menegale, 2002: 24; Grossman, 2002: 12).

1.5.2.6 Repertoire

Overall, the piano pedagogues focus on the study of the traditional piano literature, developed during the 17th, 18th and 19th centuries. They emphasise the need for a progressive repertoire (e.g. Czerny, 1982: 44; Wieck, 1988: 64-124; Menegale, 2002: 15-16), which is compatible with pupils' levels of musical understanding (Grossman, 2002: 14). Last (1954: 35-6) advises beginners to play pieces that encourage freedom of movement over the keyboard; additionally they should play easy classics, which demand good phrasing, knowledge of style, tone control and balance between the hands.

Pedagogues often neglect the vast, rich, and eclectic musical production of the 20th century. Some, however, provide a few comments on this issue. Waterman (1983: 42) states that piano students must learn works of Béla Bartók and Olivier Messiaen, among other masters of the 20th century. Enoch (1974: 67) seems to be in favour of the music produced in that century as she states that students should not neglect 'modern music'. Menegale (2002: 25) and Grossman (2002: 16) say that, although it is difficult to find appropriate musical material to introduce pupils to avant-garde music, it is necessary to do so, instead of only reinforcing the musical patterns that are well established in classical music.

1.5.2.7 Techniques of composition

Techniques of composition comprise all sorts of technical methods adopted in music composition - from polyphony and harmony to techniques developed in the 20th century. In this respect, Neuhaus and Fontainha offer a few comments. Neuhaus (1973: 134) suggests a list of pieces appropriate for helping pupils to capture the traditional polyphony and emphasises the wonders of this polyphony, suggesting that it is 'the best method of developing the spiritual qualities of the pianist, but also the purely instrumental, technical qualities, since nothing can teach *cantabile* playing on the piano as thoroughly as the multi-part texture of a slow work'. Fontainha (1956:117) outlines the aspects which are essential in polyphonic execution: the ability to accentuate one specific note of a chord; a perfect command of fingering; a perfect *legato*; and an adequate use of the pedal. He states that piano pupils need to deal with these aspects from the beginning in a simple way.

1.5.2.8 Composition, improvisation, and playing by ear

There are few references to these approaches in the piano literature. Czerny (1982: 79) stated that, if someone has attained a moderate piano skill, she or he would also be able to extemporise, at least, to a certain degree. 'But for this purpose', he continues, 'it is requisite to commence this sort of practice at an early period' (Czerny, 1982: 79). Hofmann (1910: 108) also recommends pupils to try to compose, even a 'modest little piece', as this practice facilitates the progress in other musical work.

Improvisation was one of the most important teaching tools adopted by Whiteside. (Prostakoff and Rosoff in Whiteside, 1969: 23). To her, 'the improviser does not strike one note and then stop to decide what note to play next. From the standpoint of the ear, improvisation establishes the most immediate relationship between what the ear images and the playing mechanism performs' (Whiteside, 1969: 23). Piano pupils do not interrupt the flow of musical energy when improvising, because the process of

improvisation demands the completion of musical ideas and phrases as wholes (Whiteside, 1969: 34, 160; 1951: 25). Besides, piano teachers can give pupils the sensation of solving the mechanics of the music as they learn pieces by ear (Whiteside, 1951: 25).

Cançado (2002: 17) states that improvising and playing by ear are essential skills that musicians should never stop practising. In an ideal piano pedagogy teachers should give incentive to pupils to compose and improvise freely, and also to base their improvisations in some pre-established structure (Menegale, 2002: 17). Children should learn to build up musical structures with sounds (Fonseca, 2002: 21). This study will defend the view that improvisation, composition, and playing by ear are the best means to introduce technical skills to beginning pupils, in association with the appropriate bodily gestures.

To summarise, this section on piano practice has presented discussion around piano practise, based on recent research on instrumental practice and on the piano pedagogues' views on the topic. Both, the researchers on instrumental practice and the piano pedagogues, tend to emphasise deliberate practice and planned strategies. Just a few researchers and pedagogues give equal weight to deliberate and playful practices. This contrast in opinions opens an interesting debate, relevant to the present study, which will be dealt with in Chapter 9.

1.6 Piano teachers' pedagogical approaches and roles

1.6.1 Piano teachers' pedagogical approaches

Four kinds of pedagogical approaches were the most emphasised by the piano pedagogues: modelling, which includes demonstration and imitation; conducting pupils' performances; talking to pupils; and physical contact with pupils. Piano pupils

start as imitators, moving towards the development of their own musical conceptions (Fonseca, 2002: 3). In terms of musical experience, piano teachers are references for their pupils, demonstrating how to play specific passages, solve problems, or interpret a piece of music.[1] Piano teachers can play musical passages in different ways, offering pupils a range of possibilities, so that they can choose the one they like best, and finally find their own interpretation (Waterman, 1983: 13-15). Demonstration and imitation become then an experimental approach, guiding pupils into a process of musical exploration (Bolton, 1954: 30). However, excessive imitation can be harmful. As Bolton (1954: 30) clarifies, pupils are not parrots who merely imitate teachers. If pupils' imitation is unseasoned and blind, (Neuhaus, 1973: 18), or if they try too hard to imitate the recordings of other pianists, they may put at risk their own artistic individuality (Last, 1960: 71).

Neuhaus (1973: 33) used to conduct his pupils, to indicate rhythm, tempo, *rittardando*, *accelerando* and *rubato*, and explains that the word 'pianist' includes the concept of 'conductor'. Bolton (1954: 43-4) considers that conducting pupils helps teachers 'to sort out part-playing, the breathing or bowing places, and the relative importance of the parts'. Additionally, Merrick (1958: 9) states that pianists can benefit from conducting their own performance just before playing short stretches, as this action enhances the focus on the performance, helps pianists to keep their upper arms loose at the shoulder, and gets the playing-units into a more or less ideal state of poised readiness.

Pedagogical practices typically involve teachers' oral explanations and dialogues between teachers and pupils. Oral communication is undoubtedly the commonest means of contact and transmission of ideas. Piano pedagogues seldom refer to this approach in their writings, perhaps because it is too obvious to be emphasised. Bolton (1946: 30), however, confirms that 'the living voice is the most potent influence in inspiring pupils in every type of education'.

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[1] See Ching, 1927:13, 15; Last, 1954: 141, 146; Bolton, 1954: 30; Neuhaus, 1973: 18; Waterman, 1983: 13-15; Hazan, 1984: 12-13; Rosselini, 2002: 13-14).

Abby Whiteside provides an example of how physical contact can be taken as a means of transferring musical experience, especially rhythmic sensation, to pupils. In duet playing, pupil and teacher are sitting close by. The swing of the teacher's torso contacts the pupil's right arm; the teacher slips her fingers between the pupil's fingers, being able to check excess of pressure on pupils' fingers and arms (Whiteside, 1961: 140, 142).

1.6.2 Piano teachers' roles

Concerning piano teachers' roles, both researchers on instrumental practice and pedagogues offer valuable comments, which can be applied to the diverse aspects of piano teaching. First and foremost, only individuals qualified in the specific domain should engage in instrumental teaching, as appropriate guidance from teachers is essential for pupils' instrumental development (Jørgensen, 2001: 236; Ericsson *et al.*, 1993: 372). The piano pedagogues attribute to piano teachers specific roles and competencies, reinforcing the ones analysed above by researchers on instrumental practice. In order to teach others, piano teachers themselves need to know how to study and practise (Menegale, 2002: 24), and need to have musical competency and the knowledge of the fundamentals of piano playing (Fonseca, 2002: 2). Piano teachers also must listen to their pupils attentively, pointing out their mistakes, musical faults or deficiencies (Levinskaya, 1930: 220; Coviello, 1963: 11; Whiteside, 1961: 140; D'Abreu, 1964: 24; Fontainha, 1956: 21).

Taking instrumental learning and practising into account, both, researchers and pedagogues emphasise that teachers need to inform pupils about good practice strategies (e.g. D'Abreu, 1964: 24; Coviello, 1963: 11; Pitts *et al.*, 2000: 46), training them to focus on self-regulatory methods of practising and to reflect on their learning process (Nielsen, 2001: 166). Pupils should be taught how to monitor the accuracy of their own performances (McPherson, 2001: 177; Nielsen, 2001; 166); to observe how the goal of a problem-solving activity affects and limits their strategy choice (Nielsen, 2001: 166), and to identify the reasons for differential progress, planning means for

remediation (Hallam, 2001: 21). In addition, teachers should ensure the acquisition of relevant aural schemata for the particular piece of music when pupils are learning new music and sight-reading (Hallam, 2001: 20).

To the pedagogues, piano teachers need to be conscious about what they are doing pedagogically and to have the ability to present their musical conceptions to pupils (Fonseca, 2002: 2; Hazan, 1984: 12-13). They should know how to evaluate pupils' needs (Cançado, 2002: 3; Hazan (2002: 10-11) and ideally should make all the aspects of musical learning evolve side by side. They should organise the lessons, balancing the activities; provide the necessary activities for pupils' best musical development; and provide goals for pupils, establishing tasks that need to be accomplished (Cançado, 2002: 3-18). Teachers need to inform their pupils about composers' styles, helping them to understand the characteristics of different types of music (D'Abreu, 1964: 24); and guide pupils' natural instincts for good bodily coordination, which makes good management of the instrument possible (Ching, 1927: 40). In musical terms, piano teachers should encourage pupils to feel the beauty that musical expression contains, motivating them to give life to the signs of expression that appear on the score (Fontainha, 1956: 28); and encourage pupils to develop a beautiful touch, which involves the quality, variety and control of tone production (Last, 1954: 134).

1.6.3 The teacher-pupils relationship

The teacher-pupil relationship is basic in the process of learning. This relationship should be based on mutual understanding and confidence, without which no musical development can be accomplished (Cançado, 2002: 3; Rosselini, 2002: 13-14). Piano teachers need to respect their pupils' individuality (Fonseca, 2002: 2), being attentive, patient and calm during the lessons, establishing an atmosphere in which enthusiasm is stimulated (Coviello, 1963: 22), and in which pupils can expand and expose their own musical ideas and opinions (Fontainha, 1956: 21).

Piano teachers may be expected to have an understanding of pupils' psychological problems, so that they can help them when problems arise, such as frustrations and dissatisfactions (Grindea, 1995: 105; Kaplan, 1987: 43; Hazan, 2002: 22; Rosselini, 2002: 13-4). Teachers can also encourage pupils to be patient over their own difficulties, solving their problems in the easiest and quickest way (D'Abreu, 1964: 24), and developing constructive criticism of their own learning process (Grindea, 1995: 106). Another factor that influences learning is the teacher's ability to stimulate pupils' interest and motivation in relation to their learning process, turning the learning process into something pleasurable (Kaplan, 1987: 43-61).

Even the most sensitive teacher cannot help pupils who do not have the will to learn (Fontainha, 1956: 63). Teachers can implant neither knowledge nor skill in their pupils' minds, so pupils' progress depends on their own efforts (Coviello, 1963: 11, 48). Besides, good piano lessons are not enough if pupils do not practice what has been experienced during the lessons (Hazan, 2002: 20). Pupils need to be self-confident, patient, perseverant (Hazan, 2002: 21), and take responsibility for their own progress.

Summary and conclusion

The literature on piano pedagogy reviewed in this chapter showed that overall the piano pedagogues tend to assume a teacher-directed form of instruction. As Lennon (1996: 11) suggests, 'while the teacher is the central focus, the tripartite nature of the encounter (involving teacher, student and musical content), is stressed, with teacher action being considered in relation to both the student and the music itself'. The pedagogues focus their comments on musical content, methods and techniques - 'what is to be learned' - leaving little attention to the teaching processes - 'how it is to be taught' (Lennon, 1996: 46-73).

When the piano pedagogues' comments on what is to be learned are systematised, it becomes clear that they hold similar or complementary opinions in some respects and conflicting opinions in others. However, throughout the history of keyboard technique evolution, *a major concern underpinning the discourse of the majority of pedagogues is the development of skills that lead to a natural, easy, and expressive way of playing the instrument.* In their common principles and approaches, the pedagogues determined what and how pupils should practice in order to develop these skills. They indicated that piano pupils should adopt advantageous postures of the body and hands, avoid tension, economise movements, think independently, be aware of their physical sensations, and develop good habits in piano playing and practising, avoiding a mechanical approach to the instrument. In sum, the pedagogues' desire is to anticipate pupils' physical and musical problems and enable them to present a successful and skilled final musical performance, consciously controlling all the aspects that it involves.

Research on instrumental practice is a more interactive field than the literature on piano pedagogy quoted here, since researchers are in touch with each other's productions, exchanging information on the issues under discussion. Although together with the pedagogues they take into account many variables that influence instrumental learning, practising, and performing, but they seem to focus more sharply on the understanding and discovery of strategies that lead to higher levels of performance achievement.

However, both piano pedagogues and researchers in instrumental practice put emphasis on musical achievement without considering that, in order to reach these goals, pupils may injure themselves or enhance their pre-existing difficulties. The role of piano pedagogy becomes critical in this regard because the literature on piano pedagogy fails to discuss the physical and psychological problems that pupils may present. This seems contradictory, since the pedagogues advocate an effective, 'natural and easy' way of playing the piano; but physical and psychological disorders in pianists are common, such as the so-called 'overuse syndrome' and 'performance anxiety'. These will be discussed in Chapter 3. Perhaps this issue lies outside the

remit of the pedagogues. For this reason, it is necessary to look at piano performance taking into consideration another perspective, which does not emphasise achievement, but pays attention to the agent who performs music: a whole person endowed with talents but also with difficulties that call for assistance. The Alexander Technique may offer such a perspective, and will be the theme of the next chapter.

Chapter 2

The Alexander Technique

This chapter aims to offer to readers an overview of the Alexander Technique, or simply the Technique, as it will be referred to from now on. The difficulties presented by the Alexander literature to readers, its definitions and evolution are discussed; this is followed by a detailed explanation of the principles underlying the Technique. The Alexander practice and its procedures, Alexander teachers' pedagogical approaches, and comments on teachers' and pupils' roles are reviewed in the next sections.

2.1 Difficulties presented by the literature to readers

The Alexander Technique literature is extensive, including Alexander's writings, as well as those teachers who continued his work, informal reports made by practitioners, and research on the Technique in connection with different topics. The difficulties found in this literature are not comparable with the ones presented by the piano pedagogy literature in Chapter 1, as the topics presented by the Alexander writers are systematized around its principles and application to daily activities. However, the writings of F. Matthias Alexander present difficulties to readers, and have received criticism throughout the years. Carrington (1970: 8) provides an example of such criticism:

> Some people complain that they find his writings obscure and difficult to read. Some find his insistent emphasis on the "self" distasteful. Others dismiss him as some sort of a "health" or "posture" crank: and others regard him as a quack, an ignorant pretender to expertise in a non-existent science.

Alexander's complex explanations and long sentences do not make it easy for readers to understand the meaning that many passages seek to convey. In fact, according to Carrington (1999: xxi) and Tasker (1967: 16), Alexander was always looking for the best way of explaining things, carefully selecting words. Besides, Alexander's books contain a detailed description of the evolution of his technique and provide a number of references to its application to daily life (Tasker, 1967: 18). Jones (1976: 44) points out that Alexander's books were based on a system of ideas beyond his time, namely, the application of the principle of mind-body unity to everyday living.

As the Alexander Technique represents 'a personal and subjective experience' (Garlick, 1933: 5), writings on the topic can be meaningless or misleading for non-practitioners. (Jones, 1998: 12). Alexander (1923: 76-7) wrote that the sensory experiences provided by his technique 'cannot be described in writing or by the spoken word in such a way as to be of practical value'. Aldous Huxley (1941: 223), who had lessons on the Technique, endorses this comment, explaining that

> …no verbal description can do justice to a technique which involves the changing…of an individual's sensory experiences. One cannot describe the experience of seeing the colour, red. Similarly, one cannot describe the much more complex experience of improved physical coordination. Complete understanding of the system can come only with the practice of it.

Although writers recognise the difficulty of describing the Alexander experience, they offer different ways of understanding what the Technique is about. These understandings are not contradictory, but reinforce, complement and enrich each other, as will be seen below.

2.2 Understanding the Alexander Technique

After a search for clear definitions of the Alexander Technique, three instances of the literature were examined: Alexander's explanations of what his work is about; the explanations offered by Carrington, Macdonald, and Jones, first generation teachers trained by Alexander himself; and the work of Nicholls, a second generation teacher of the Technique. Alexander (1923: 55; 1995: 91) refers to his technique as a method of re-education, re-adjustment and co-ordination of the human organism on a plane of constructive, conscious guidance and control. By re-education, Alexander (1941:144-5) means a gradual restoration of something that has been previously experienced, but for some reason has been lost. His technique aims to restore a reasonable use and functioning of the whole organism, ensuring continued improvement of its equilibrium throughout life (Alexander, 1923: 144). The Alexander concept of 'use and functioning' refers to a manner of use of oneself that 'has anything to do with the nature of our functioning or of our reaction to stimuli' (Alexander, 1941: 10). So use and functioning involve the habitual ways of moving the body, and the relationship between parts of the body in response to stimuli provided by the environment. Alexander (1941: 104) explains that:

> I was concerned with a technique for dealing with the working of the living human organism as a whole, which called for a knowledge of the so-called mental (psychological) and physical (physiological and anatomical) working of the human organism as an indivisible unity.

Carrington (1994a: 83; 1994b: 5) states that the Alexander Technique is 'the start of a learning process', emphasising its educational status. The Technique involves both physical and mental re-education, the students' mental attitude being the secret of its practice (Carrington, 1989: 4; 2001: 139). It is a technique of self-help, since its practice leads people to learn to take responsibility for themselves (Carrington, 1989: 4; 2001: 58). It helps practitioners to stop interfering with the functioning of the human organism, allowing them to change their habitual reaction to daily stimuli

(Carrington, 1994a: 92; 1994b: 52). Thus, the Technique marks a new departure in the field of physical education (Carrington, 1989: 4).

Barlow (1973: 162) emphasises the preventive, self-educative nature of the Alexander Technique. In its initial phase, the Technique has a 'de-conditioning' character, as it shows people how they misuse their bodies. Subsequently, people learn to work on themselves in order to overcome their harmful bodily habits, and build up new positive habits of use (Barlow, 1973: 162). The Technique involves personal and intimate adjustments in daily living, and helps practitioners to understand the meaning of expressions like 'the whole man' and 'psycho-somatic integration'; it offers an improved health for someone who is prepared to undertake the required discipline (Barlow, 1973: 45).

To Macdonald (1989: xiii), the Alexander Technique is a discovery of 'the natural rhythm within the human body which exists in the sensory and motivating nerve circuits'. In many people this rhythm has become distorted, causing illness and disease; the Technique re-educates the sensory and motivating nerve circuits of the whole body, promoting the development of sensory awareness which enables people to use the body for the best advantage on a daily basis (Macdonald, 1989: xiii).

Quoting Dewey, Jones (1998: 37) refers to the Alexander Technique as a field of knowledge: the knowledge of how to use ourselves in the usual activities of life. The Technique's purpose is to help people to bring their activities under conscious and reasoned control (Jones, 1998: 5). Jones (1998: 37) emphasises its value as a problem-solving technique, which teaches people how to bring more practical intelligence into what they are already doing; how to eliminate stereotyped responses; and how to deal with habits and change. It 'leaves you free to choose your own goal but gives you a better use of yourself while you work toward it' (Jones, 1976: 2, 11, 35). Jones (1974: 9) also emphasises the expansion of self-awareness provided by the Alexander Technique.

To Nicholls (1991: 8), the Alexander Technique overlaps with many areas, so it would be possible to define it only by taking into consideration each student's interests, problems, and motivations. In a broad context, the Technique 'has an interface with orthopaedic and osteopathic medicine, with performing art skills…with the teaching of any skilled performance, with psychology and psychotherapy and with education' (Nicholls, 1991: 8). The Alexander Technique enhances awareness through a 'very precise mechanism' (Nicholls, (1991: 8), which refers to the interconnection between systems of balance, posture, control of muscle tension, mental and emotional states and attitudes (Nicholls, 1991: 28). Finally, the Technique has a strong action on peoples' behavioural and psychological side, helping them 'to enhance the organism's self-organising capacity' (Nicholls, 1991: 32-3, 36).

The Alexander Technique is not a manipulative method, in which pupils are passive, and do not learn how to deal with their own tension states (Barlow, 1973: 113). Carrington (1970: 14) asserts that Alexander Technique is not

> …a royal road or panacea: it is not a new sect in philosophy: nor is it some new secularist religion. In medicine it is an essential factor in complete diagnosis, but it is not mainly a therapeutic technique – as is often thought – for it is not designed to effect remedy or cure except by the indirect means of improving functioning by re-education leading to the prevention of misuse. Above all it is a means of education, and as such its most important application lies in the educational sphere.

As Jones (1976: 138-9) clarifies, the Alexander Technique is not curative but preventive; it does not provide sudden changes, but implies an incessant process of self-education. It does not aim to eliminate specific symptoms directly, or to provide correct postures or positions, but to promote a coordinated use of the mechanisms in general, and a proper way of organising the body as a whole (Alexander, 1923: 60-97; Macdonald, 1989: 21-50).

From these writers' definitions, it is clear that the Alexander Technique is not a method of relaxation, an alternative therapy, a treatment, a method of cure, or a sequence of postural exercises. It can be considered as:

- A technique of re-education, which deals with the interconnection between systems of balance, posture, control of muscle tension, mental and emotional states and attitudes, readjusting and integrating these systems through the practitioners' constructive and conscious control;
- A problem-solving and self-helping technique, which enables practitioners to change stereotyped reactions and harmful habits of use of their own organisms;
- A field of knowledge based on a concept of mind/body unity, which promotes the development of sensory awareness and provide the means through which practitioners can use their organism to the best advantage on a daily basis.

Complementary definitions of the Technique have been supplied in this section. However, the Alexander experience can be better understood in the light of its evolution and working principles, which follow next.

2.3 The evolution of the Alexander Technique

This section presents two of the main aspects of the Alexander Technique's evolution. Firstly, it offers a brief summary of the second chapter of *The Use of the Self* (Alexander, 1932), which describes Alexander's practical experiences and the development of his technique. Secondly, it deals with Alexander's own teaching and the training courses for Alexander teachers, disclosing the evolution of the pedagogical aspect of the Technique.

2.3.1 The origin and development of the Alexander Technique

Biographical accounts on the evolution of the Alexander Technique are extensively reported in the literature[1]. These accounts show that the Technique's history is the history of a man: Frederick Matthias Alexander (1869-1955), who was born in Tasmania, Australia, and died in London at the age of 86. Alexander established himself as an actor and recitalist. He engaged in Shakespearean reciting as a career, and practised dramatic expression in Sydney and Melbourne, in the early 1890s. Early in his career, he suffered persistent hoarseness and respiratory problems that influenced the quality of his voice during presentations. His breathing was audible, and he was 'gasping' and 'sucking in air' during recitations (Alexander 1932: 24). Medical help was insufficient to solve the problem, as his voice improved only as long as he abstained from using it. After a few years, his hoarseness culminated in a complete loss of voice during performance (Alexander 1932: 24). Instead of renouncing his career, Alexander concluded that he was doing something to cause the vocal problem that had emerged. Over a period of years, he pursued the cause of his vocal crisis, surrounded by mirrors, carefully and intensively observing his own physical functioning whilst reciting. As a result, Alexander gradually developed a unique procedure to solve his vocal problems; this is called the Alexander Technique.

Alexander's (1932: 22), understanding of the human organism's functioning came as the outcome of his own experimental investigations, not as a result of mere theorising. In his intense process of self-observation, he discovered that when reciting he was pulling back the head, depressing the larynx, and sucking in breath through the mouth, producing a gasping sound (Alexander, 1932: 26). Through experimentation and observation before the mirror, Alexander was able to prevent the pulling back of the head, although he could not avoid the sucking in of breath. Picture 2.1 shows the pulling back and down of the head to which Alexander refers.

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[1] See Alexander (1932, 1941), Adams (1995), Alcantara (1997, 1999), Barlow (1973, 1978), Ben-Or (1995), Carrington (1969, 1970, 1989, 1992, 1994, 2001), Dimon (1998), Gelb (1981), Holland (1978). Jones (1975, 1976), Owen (1955), Robb (1999), and Westfeldt (1998).

Picture 2.1: (a) The pulling back and down of the head, compared with the dropping forward of the wrist. (b) A balanced position of the neck and head, compared with a relaxed position of the wrist. *Source: Barlow, 1973: 25.*

When he was able to prevent the pulling back of the head, his hoarseness tended to decrease. Further investigations led him to notice that, whilst pulling the head back, other actions of the organism were also happening, such as lifting the chest and shortening the stature. He finally understood that in activity the segments of the organism are interrelated in such a way that they constantly influence each other. For instance, in Alexander's case, neck tension influenced the use of the legs, feet, and toes, and tension in these influenced his vocal functioning. The wrong way of using his vocal apparatus constituted a combined wrong use of the entire organism.

Alexander then started trying to oppose his habits of pulling the head back and down. He did so by putting his head forward and up, lengthening his stature, and widening his back whilst speaking or reciting. He discovered, however that, whilst acting, reciting or speaking, he would soon revert back to his old wrong habits of use. So he gave up controlling the old instinctive habit of pulling the head back and down. Instead, he tried to stop permanently this habitual reaction whilst projecting the new directions (head going forward and up), which assured a new and better use of himself. Put otherwise, there should be *a continuation of the stopping of habitual reactions and of the projection of the directions for maintaining a new and improved use of the organism.*

After a considerable time working on this plan, Alexander was able to change his habitual use of his body in reciting, and became free from his vocal problems and respiratory difficulties. After its conception the Alexander Technique became more than a valuable technique for solving such problems. For many it became a 'skill for life' (Alcantara 1999).

2.3.2 The pedagogical evolution of the Alexander Technique

The pedagogy of the Alexander Technique is derived from F. Matthias Alexander's teaching. As Alexander's health improved so remarkably, doctors encouraged him to teach his technique to others. Oral explanations were not the best means through which he could instruct pupils. By using his hands, Alexander could prevent pupils' habitual use, and direct a conscious sensory experience of carrying out activities in a non-habitual and more efficient way (Jones, 1975: 2). This allowed pupils to become aware of the differences between their habitual responses to stimuli and this new way of using their organisms in activity (Jones, 1975: 2).

Between thirty and forty lessons are necessary for beginners to start experiencing and applying the Alexander principles to daily activities (Garlick, 1933: 54; Gelb, 1981: 144; Carrington, 2001: 99; Williamson, 2003: 6). But even a few lessons can be beneficial (Williamson, 2003: 6). Alexander's beginning pupils used to have five lessons per week, in which they received 'turns': Alexander used to put his hands on pupils for some minutes during a specific and simple activity such as sitting and standing, lying on a table, or walking.

In Melbourne and Sydney, Alexander taught the Technique to singers, performing artists, and patients sent by local doctors. In 1904, he came to London where well-known artists and writers took lessons in the Technique, for instance, Bernard Shaw, and Aldous Huxley. From 1914 to 1924, Alexander made several journeys to the

United States. At this stage, he had his brother, A. R. Alexander, and his sister Amy, as well as Ethel Webb and Irene Tasker as assistants. These were the first Alexander teachers, who had learned the Technique in an informal way, through direct and constant contact with Alexander. In the same way, Irene Tasker trained Joyce Roberts (Waker in Taylor, 2000: 95). So, as some authors emphasise (Williams in Taylor, 2000: 25; Carrington in Taylor, 2000: 54; Spawforth in Taylor, 2000: 106), the initial pedagogical approach to teaching the Technique was through apprenticeship.

In 1931, Alexander started the first training course in the Technique for student teachers in London. He continued conducting the three-year training courses until the year of his death in 1955, with interruptions during the Second War, and during the period in which he suffered from a stroke (1948). After Alexander died, a number of his trainees continued running training courses. Walter Carrington was one of Alexander's closest associates and, together with his wife Dilys, continued running Alexander's training course from his death until the present day. Marjory and Wilfred Barlow, as well as Patrick Macdonald also ran their own teacher training courses (from 1950 to 1982, and from 1957-87 respectively) (Barlow in Taylor, 2000: 66-7; Carrington, 1996: 82-96).[1] .

Obviously Alexander's trainees started to develop their individual styles of teaching the Technique; these are noticeable in practice, especially the differences between Carrington's and Macdonald's styles. Although the literature does not largely expose these differences, some comments in this respect can be found. For instance, when giving 'turns', Patrick Macdonald suggested that pupils should put their feet very wide apart (Carrington, 1992: 43). The Carringtons incorporated the practice of crawling in their teaching, under the anatomist and anthropologist Raymond Dart's influence (comments on Dart will be offered in a future section) (Taylor 2000: 56). They also developed the so-called 'games', in which the teacher demonstrates a

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[1] Walter Carrington started training with Alexander in 1936; Dilys Carrington in 1955; Marjory Barlow in 1933, and Wilfred Barlow in 1939; Patrick Macdonald started in 1932.

specific activity, inviting teachers and students to work on it (Carrington in Taylor, 2000: 41). It is important to emphasise that these differences are pedagogical, involving only procedures and approaches. The genuine nature of the Alexander Technique relies upon its working principles, which remain immutable in the training courses established by his trainees, and should also prevail in all Alexander teachers' practices.

2.4 The principles of the Alexander Technique

The Alexander Technique provides a system of 'preventive principles, by which a condition of co-ordination of the entire psycho-physical mechanism could be restored and maintained' (Alexander, 1923: 42). These principles are not new in themselves, and may be found in other techniques and educational methods. Nonetheless, when these principles are unified in the Alexander practice, they provide a unique method of re-education on a conscious and general basis, giving practitioners the choice to change harmful habits of use, as stated above. The principles are blended together in the Alexander practice, being assimilated by practitioners continuously and simultaneously. For sake of clarity, they will be presented here one by one. The terms adopted to define each principle were selected by Alexander himself, and henceforth this study will adopt the same terminology as he used.

2.4.1 Psycho-physical Unity of the Individual

'The unity of the human organism is indivisible' (Alexander, 1932: 54). This argument suggests the inseparability of mental, emotional, and physical processes in any form of human action. As mentioned before, Alexander discovered that each segment of the body reflects the whole and is always connected to all other segments So every segment of the human body - from the toes to the top of the head - takes part in every action (Alcantara, 1999: 10). Alexander employs the terms 'psycho-physical self' or 'psycho-physical unity' as interchangeable to express the indivisibility of the

human organism. He uses the word 'self' as a comprehensive term which includes the various aspects of our personality, the entirety of the human organism (Carrington, 1992: 110-11).

2.4.2 Primary control

In the course of the development of his technique, Alexander (1932: 65) discovered that 'there is a primary control of the use of the self, which governs the working of all the mechanisms and so renders the control of the complex human organism comparatively simple'. The 'primary control' can be understood as a dynamic relationship of the head in relation to the neck and the neck in relation to the trunk, a practical concept, which enabled Alexander to guide and control his own use of himself on a general basis. This relationship can be brought into operation by thought, and instead of changing the manner of using each separate part of the organism, it readjusts and integrates each part in connection to the whole (Carrington, 1994b: 20; Westfeldt, 1998: xiii-134). Thus it is a central agency that, if used correctly, allows people to work and function as a psycho-physical unity, as all the segments of the body are connected to it. This correct functioning does not entail any 'right' position, but an ever-changing relationship between the head, neck, and trunk, and thus a dynamic balance of the entire organism (Alcantara, 1997: 28). Misuse of the 'primary control' leads to the lowering of the standard of general functioning, and represents a constant influence for illness (Alexander, 1941: 48-9). On the other hand, when the functioning of different parts of the body becomes imbalanced, they can disrupt the 'primary control', and consequently the overall functioning of the body (Westfeldt, 1998: 58).

Westfeldt (1998: xiii) questions the term 'primary control', as it is ambiguous and lends itself to misunderstanding. Instead, she adopts the term 'HN & B pattern', meaning the head, neck, and back pattern. Conversely, Carrington believes that the expression 'primary control' is appropriate: it is certainly a 'control', since it depends on our power and will to change its functioning; and it is 'primary', since the freedom

and poise of head and neck is the prime tool with which practitioners assess what is going on in their organism (Carrington, 1994a: 85-6, 88).

Westfeldt (1998: 69) claims that sometimes Alexander considered the 'primary control' as a physiological entity. In opposition, Foley (2002: 8) argues that Alexander's writings do not give any evidence for the idea that 'primary control' is a physical entity, and constantly offer a more complete term such as 'primary control of the manner of use of the self'. 'Rather than identifying the 'primary control' as a specific physical entity in the body, this conveys the concept of a broad multi-component system, monitoring and adjusting the relationships of the various components of the body in a coherent manner' (Foley, 2002: 8). In fact, the 'primary control' cannot be taken as a physical or physiological entity. As Jones (1998: 16) suggests, the 'primary control' cannot be destroyed or injured, but remains intact and prepared to operate as soon as people stop interfering with its functioning.

2.4.3 Use and Functioning

As stated previously, the Alexander concept of 'use of the psycho-physical self' refers to a 'total pattern of activity' (Jones, 1998: 12), the habitual ways in which people use their organism as a whole, including the mental, emotional, and physical processes (Carrington, 1994a: 93). This means that such use involves the way people think and feel, and the way in which the physical organism works (digestion, circulation, and so on). Alexander (1941: 12) realised that use constantly influences and affects general functioning, for good or ill. 'Change the manner of use and you change the conditions throughout the organism' (Alexander 1932: 80). So the manner of use is our entire responsibility. People are rarely able to accept this responsibility, for they are not conscious that their psycho-physical well-being depends on how they use themselves. Barlow (1978: 128) put it thus:

> ...few of us recognise that our manner of use has anything to do with the nature of our functioning or of our reaction to stimuli; nor the extent to which our

> physical-mental well-being depends upon the manner in which we use ourselves during our waking and sleeping hours…The majority of people have developed a manner of use of themselves which is constantly exerting a harmful influence not only upon their functioning but also upon their manner of reaction.

As Alexander practitioners change their manner of use, it becomes possible to improve the psycho-physical functioning, and consequently to react differently to stimuli. An improved use of the self, which promotes good balance and coordination, provides better functioning of the organism in any daily activity. However, change in use of the self is not something easy to attain; it calls for the ability to stop the employment of harmful habits that impair good balance and coordination.

2.4.4 Inhibition

Differently from the Freudian understanding of the perspective of inhibition, in the Alexander Technique the term 'inhibition' indicates a refusal to act immediately in response to a given stimulus or a habitual reflex activity (Alexander, 1932: 40; 1941: 86). In other words, to inhibit means to postpone immediate action (Jones, 1998: 8), to say 'no' to the 'automatic inevitable response' or to a 'too quick and unthinking reaction' (Carrington, 1999: 59). It also means saying 'no' to feelings that are involved in trying to gain specific ends. It is a matter of consciously refusing to respond in a stereotyped way (Gelb, 1981: 59).

Alexander (1932: 54) suggests that, through inhibition, it is possible to prevent misdirection that leads to the incorrect use and functioning of the human organism. The preventive act of inhibiting is primary because it is the first thing to consider before any attempt to change habitual responses, and before installing new and better means for the execution of any action (Alexander, 1932: 63). Thus, inhibition indicates a preparatory stage on the basis of which a new use of the self can be established (Barlow, 1973: 194).

Inhibition demands time. If people give themselves time, they have the possibility of changing old habitual patterns of use and choosing a new way of action (Macdonald, 1989: 49; Carrington, 1999: 1). Moreover, as Alexander (1932: 47) pointed out previously, people's instinctive response to the stimulus should not only be inhibited at the start, but remain inhibited whilst the directions for a different use of the organism are being projected. So, inhibition is not a passive action. Quite the opposite, it implies continuous self-observation, and the incessant prevention of misuse.

Constant inhibition of habitual patterns of use leads to a 'non-doing' state, which inaugurates a new kind of doing, involving minimum muscular contraction, and maximum of release. The learning and practising of non-doing becomes a criterion through which one can measure the quality of her or his doing (Carrington, 1994: 140). Macdonald (1989: 27) adds that non-doing is a subtle kind of doing. 'In doing, you do it, whereas in non-doing, it does you' (Macdonald, 1989: 27). The Alexander Technique lesson is mainly about non-doing, which is, more than anything, a mental attitude (Carrington, 1994: 134-5).

2.4.5 Conscious direction

Carrington (1999: 104-5) compares Alexander's idea of 'direction' with a 'flow of energy', or with a 'stream of water flowing'. Macdonald (1989: 67) and Alcantara (1997: 59) present a similar understanding of this concept. Whilst the former states that direction corresponds to a 'flow of force', or 'flow of electricity' which can be sent to modify the condition of parts of the organism, the latter suggests that direction is not a muscular activity, but 'an energizing which precedes and accompanies ordinary muscular activity'. So direction is movement of a special kind, because it involves a conscious guidance of the flow of the vital energy. Carrington (1994a: 23) writes:

Energy is directed all the time in the body by processes that we often are not aware of, processes that operate below the level of consciousness. Even when we are asleep, energy is operating in the body. Conscious direction of energy is another matter…You clearly direct your energy by thinking about it…conscious direction we can speak of as a thinking process to direct energy, as an energetic process.

To the Alexander practitioner, control of oneself involves conscious intention and choice of how the vital energy should be directed. 'Conscious intent', 'conscious purpose', 'wish', and 'will' are words that Carrington (1994: 19) associates with direction. He claims that:

> …it is the willing and the wishing, the going on willing and wishing, so that there's the persistency and the continuity, the drive, the force, the energy in that channel that we are looking for. You've got to determine the direction first…but then if there isn't the supply of energy, you won't get anything (Carrington, 1994a: 19).

Alexander practitioners assume the responsibility for the use of themselves by informing themselves with thought (Barlow, 1978: 21). Ultimately they are 'thinking in activity', in Dewey's terms (Dewey in Alexander, 1932: 42). Thus direction refers to the cultivation and refinement of connections between thinking and action (Alcantara, 1997: 56, 62), a possibility of 'thinking and acting in a self-directed way' (Mills, 1996: 8). Direction becomes then an imaginative and creative action which brings together thought and awareness of physical sensation and movement. Alexander (1932: 35) clarifies:

> When I employ the words 'direction' and 'directed' with 'use' in such phrases as 'direction of my use' and 'I directed the use', etc, I wish to indicate the process involved in projecting messages from the brain to the mechanisms and in conducting the energy necessary to the use of these mechanisms.

In order to project these messages from the brain to the mechanisms, Alexander formulated a set of oral orders: 'I ask to my neck to be free', 'I ask my head to go forward and up', 'I ask my back to lengthen and widen'. What do these orders entail, in physiological terms? First and foremost, the orders have an inhibitory and preventive purpose, as they are projected to prevent habitual interference with the 'primary control' (Alexander, 1910: 60, 1923: 101; Barlow, 1996: 10; Barlow, 1999: 10; Carrington, 1994a: 61; Jones, 1976: 17; Macdonald, 1989: 78; Nicholls, 1991: 48-9; Frederick, 1977: 7). The orders do not involve 'doing', but 'non-doing'. The releasing of the neck muscles allows the head to go up and forward instead of backward and down. Therefore, 'up and forward' indicates that tensions that pull the head back and down must be inhibited (Macdonald, 1989: 78). A lengthening of the spine and a widening of the back become possible if practitioners prevent the arching of the spine and the narrowing of the back. On the other hand, as Barlow (1996: 16) emphasises, 'the directions refer to relationships within the body'. Consequently the orders also refer to these relationships - head forward and up in relation to the neck (Westfeldt, 1998: 137). Additionally, the direction 'forward and up' entails the idea that 'the head leads and the body follows', which corresponds to the biologist Rudolf Magnus' findings, as we shall see in the next section

When these preventive orders are employed, a lengthening of the spine and consequently a lengthening and widening of the organism are attainable. Carrington explains that lengthening and widening entail the release and expansion of muscles which were previously shortened and compressed. To Carrington (1996: 32), lengthening means:

> ...that this nice stretch is taking place, that muscles are being brought to their full natural length, and they are just being stimulated then to respond, so that you have got liveliness and tone...if you get your balance working correctly, if you get the natural process operating there, then you have got lightness, freedom,

> muscle tone; you have got your breathing, your circulation, your digestion; you have got all good things, from the physical point of view.

The orders may also help Alexander practitioners to allow the emergence of directions (Jones, 1976: 17; Macdonald, 1989: 79; Adams, 1995: 2). Alexander (1932: 35: 42) states that:

> ... working for a given end, we can all project one direction, but to continue to give this direction as we project the second, and to continue to give these two while we add a third, and to continue to keep the three directions going as we proceed to gain the end...all together, one after the other.

The concept of conscious direction assumes a much more complex and interesting facet when antagonistic pulls are employed. Alexander applied the terms 'antagonistic muscular actions' or 'antagonistic pulls' to explain the principle of counter-weight (Carrington, 1992: 53). As Robb (1999: 179) explains, from a simplistic mechanical point of view, the human body involves a system of weights and levers which are subject to the force of gravity; gravity stimulates a series of antagonistic pulls throughout the musculature. Alexander realised that, in the interplay between gravity and musculature, a balance of energies in opposite directions should be in play during movement, so that practitioners would be able to maintain an effective coordination of the entire organism. As a consequence of antagonistic action, each segment of the human body is constantly expanding and lengthening, because they are moving away from each other (Fisher in Eyal, 1966: 133). For instance, when they sit down, gravitation invites people to move back and downwards. Applying an antagonistic action, the Alexander practitioners direct themselves to the opposite direction, which is upwards. Another example: both arms are expanding from the chest and back in antagonistic directions.

2.4.6 Means and ends

Another essential principle in the Alexander Technique is the 'end-gaining' and 'means-whereby', which form two facets of the same prism. 'End-gaining' refers to people's tendency to work for ends, results and goals, without ensuring that the means adopted to reach these ends are the most appropriate ones. Barlow (1973: 78) writes that 'end-gaining' is 'the determination to get short-term ends on a reflex stimulus/response basis, without ensuring that there are no harmful by-products'. When we live by the 'end-gaining' principle, our actions and reactions become 'over-quick and over-energetic' (Barlow, 1978: 192). Huxley (1978: 151) claims that 'we are all, in Alexander's phrase, end-gainers. We have goals towards which we hasten without ever considering the means-whereby we can best achieve our purpose'.

If the focal point of people's attention is to reach specific goals, they will certainly follow their unconscious habitual way of attaining these goals, as the execution of actions is a 'doing' based on habitual manners of use of the self. For this reason, as Alexander (1941: 97) points out, any attempt to directly change this 'doing' is difficult if not impossible. Thus, as he suggested earlier, the proper way of approaching this problem is an indirect way, through inhibition of the habitual way of use in reacting to stimuli (Alexander, 1941: 97).

Alexander (1932: 49) adopts the term 'means-whereby' to indicate a reasoned means to the gaining of ends. The Alexander practice pays attention to the quality of the means through which any act is to be accomplished; improving this quality begins this with a careful use of the psycho-physical organism. Taking care of the means-whereby allows people to choose better ways of responding to stimuli. As Dimon (1999: 80) claims, 'how the act is performed alters the possibility of what happens in the act itself'. If the quality of means employed is poor, the results are likely to be equally poor (Macdonald, 1989: 2), whereas reasonable and intelligent means of using the psycho-physical self during activity bring quality into the performance of such activity.

2.4.7 Faulty Sensory Appreciation

In Alexander's writings, the word 'feeling', or 'sense of feeling' appears as a synonym for sensory appreciation. According to Dewey (in Alexander, 1941: xxx), the term 'sensory' refers to organic sensations as well as kinaesthetic senses. Kinaesthesia is a sense that gives us qualitative information about our organism, and about the manner of using the muscular mechanism, involving the awareness of tension, effort, heaviness, lightness, movement, weight, fatigue, position, rest and motion (Adams, 1995:1; Barlow, 1946: 3; Jones, 1975: 1; Jones, 1976: 155; Jones, 1968: 12). Kinaesthesia also includes the beliefs that people have about their muscular capabilities, the habitual pattern of sensory awareness that provides confidence or distrust in carrying out muscular activities (Barlow, 1946: 3).

When peoples' sensory appreciation becomes faulty and untrustworthy, they react to stimuli in inappropriate ways. 'If one's sensory appreciation is false, all else is false' (Macdonald, 1989: xiii). Alexander (1941: 91) elaborates:

> In consequence of the unreliability of his sensory impressions, man's interpretation of his own and other people's experience in living is too often faulty and illusive, and he is liable to arrive at false conclusions, and to form erroneous judgements, especially where the motives for his own and other people's behaviour and general activities are concerned. These tendencies, combined with that of a too quick and unthinking reaction on his part due to his becoming a confirmed end-gainer, must continue to block his way to success in his attempts to make changes, and to control reaction.

In order to change their psycho-physical use, Alexander practitioners need to suspend judgements based on their sensory appreciation, and experience something beyond habit (Gelb, 1981: 57). This process entails the development of self-awareness, which is something that inevitably happens to Alexander practitioners. Jones (1074: 9) states that, beyond the frontiers of self-awareness:

> ...[there] is an expansion of the field of consciousness (or of "attention" if you object to the term "consciousness") in space and in time so that you are taking in both yourself and the environment, both the present moment and the next. It is a unified field organized around the self as a center. At the beginning it has a very simple system (including the relation of the head to the trunk) and something in the environment. In addition to the head relation you can take in the pressure of your feet against the floor and also the pressure of the floor against the feet; you can take in both your eyes and the object you are looking at; your ears and the sounds you are hearing. You can take in what you are doing now and what you are going to do next, without getting tangled up in the process. The expansion of awareness in time restores free will as a datum of experience.

In this section, the Alexander Technique's principles of psycho-physical unity, primary control, use and functioning, inhibition, conscious direction, means and ends, and faulty sensory appreciation have been described. To summarise, Alexander practitioners continuously inhibit their habitual responses to stimuli, allowing a state of non-doing to emerge. Through release, they consciously direct the use of the psycho-physical self during activity. The primary direction is 'up'. This interplay between inhibition and direction occurs through the conscious and continuous monitoring of relationship between the head, neck, and trunk (primary control), which enables practitioners to guide their own use, avoiding an 'end-gaining' mode of attainment, and adopting the best 'means-whereby' to perform any activity. Such a process requires time to be learned, and can only happen when practitioners allow it to happen (Jones, 1976: 14).

Since this permission is given, Alexander practitioners can also carry out positive changes in posture, balance and the general coordination of the organism, which lead to improvement of health (breathing, digestion, and circulatory improvements), lightness and freedom of movement, more flexibility, reduction of tiredness, and higher levels of vital energy. They can also expand their awareness, seeing themselves in a holistic way. 'New areas are opened, new possibilities are seen and then realized; one finds oneself continually growing, and realizes that there is an endless process of

growth initiated' (Dewey in Jones 1998: 28). This makes the Alexander Technique a method of changing every aspect of an individual's life (Alcantara, 1997: 54).

2.5 Support for the Alexander Technique

After Alexander started to develop his technique in the last decades of the 19th century, his discovery obtained recognition and support from diverse settings. In the educational setting, the U.S. philosopher John Dewey offered strong support for the Alexander Technique. Dewey's introductory notes on Alexander's (1910, 1923, 1932) books reveal his understanding of the Technique as a scientific method based on knowledge of the human organism. Dewey pointed out that to be considered as scientific, a method must guarantee that observable consequences flow from the principle or theory; this was so in the case of the Alexander Technique, since the principles and the observed consequences of their operation developed simultaneously and in connection with each other (Dewey in Alexander, 1923: xxiv). The Technique also satisfied the demands of scientific method, because it afforded the conditions for making new observations and re-making older observations under new circumstances, suggesting further experimentations (Dewey in Alexander, 1923: xxvii, 1932: 9).

The Alexander Technique has been supported by a number of scientists. Between the 1910's and the 1920's, the biologist Rudolf Magnus 1873-1927) developed research on the factors which control the changes of animal posture in relation to gravity, and on the muscular tonus by which posture is maintained (Carrington, 1970: 11). Magnus demonstrated that the head-neck reflexes are a central mechanism that controls animals' orientation in their environment (Jones, 1976: 47). Magnus (in Carrington, 1970: 12) explains that:

> It is possible to impress upon the whole body different adapted attitudes by changing only the position of the head…the mechanism as a whole acts in such a way that *the head leads and the body follows.* The entire body follows the direction assumed by the head, this being very often moved in a certain direction

> under the influence of the tele-receptive higher sense-organs. This provides one of the ways in which the relation of the body to its environment is regulated [my italics].

The central mechanism to which Magnus refers addresses a physiological entity. Alexander's 'primary control' addresses a similar idea, however not as a physiological entity, but as a relationship established by the Alexander practitioner's intention, as mentioned previously. Yet Magnus' and Alexander's discoveries emphasise the importance of the head-neck reflexes as fundamental in the postural mechanisms of animals and human beings respectively.

Sir Charles Sherrington (1857-1952) developed relevant research on the growth and development of the nervous system. He established the knee-jerk as a true reflex, set forth the doctrine of reciprocal innervation, defined the synapse, demonstrated the stretch reflex and discovered decerebrate rigidity (Jones, 1998: 238). Sherrington recognised the value of the Alexander Technique, as he knew from his own experience that the neck and head are intrinsically connected with the control of posture, movement, and balance (Stevens, 1995: 4).

The anthropologist, palaeontologist and professor of anatomy, Raymond Dart (1893-1988) had Alexander lessons from Irene Tasker in South Africa and supported the Technique, which can be confirmed by his writings (Dart, 1996). After having Alexander lessons, he produced a series of movements known as 'Dart procedures'. These movements are not exercises, but a process of self-examination that should be guided by a skilled teacher (Murray in Dart, 1996: 162). Dart procedures can be considered to be 'an invaluable addition to the repertoire of natural movements' (Murray in Dart, 1996: 163).

The anatomist George E. Coghill (1872-1941) developed his analysis of the nervous system of *Amblystoma*, a type of vertebrate that is both terrestrial and aquatic, allowing it to be observed in both conditions. According to Coghill (in Alexander, 1941: xxi) there are two functions of the vertebrate's limbs: a primary one, which is integrated with the trunk, and gives rise to total pattern reactions; and a secondary one, which occurs in response to local stimuli, so that it elicits reflexes as partial patterns which are always subject to the total pattern. In other words, Coghill found that postural reactions of the limbs are connected with a total pattern of reaction, and that the sensory factor is in the proprioceptive system; this finding reinforces the Alexander concept of 'primary control'. 'The stimuli arise wholly within the organism', writes Coghill (in Alexander, 1941: xxii). Carrington (1994b: 16-7) explains:

> ...the behaviour of an organism takes the form of a "total pattern of response": that is to say, in response to a stimulus either from within or without, the entire organism reacts as a whole. No single part, such as the head, neck, or limb, for instance, responds alone; but all the parts react together in a "unitary pattern of action". The form of this "total pattern" is not merely accidental; it is determined by the structure of a definite nervous mechanism which Coghill has defined and which, he says, forms a "clearly recognisable component of the nervous system".

To support the Alexander Technique, Frank Pierce Jones developed a research programme at Tufts University. In a series of studies, Jones *et al.* (1998) explored the hypothesis that the Alexander Technique employs the postural reflexes as the mechanism of change. They investigated the role of the head-neck reflexes in human movement and postural tonus, mainly through the observation of changes in habitual patterns of movement from sitting to standing. In the majority of these studies, the subjects were required to do these movements by themselves ('habitual posture'); later they repeated these actions conducted by Jones' hands, which changed the poise of the subjects' head by applying sufficient upward pressure at the occiput ('experimental posture'). By means of multiple-image photography, the electromyographic technique, X-ray photography and a strain-gauge platform, a series of pictures was produced.

In Jones' experiments, physical measurements were also obtained and the data were given graphical and statistical treatment. The findings showed that in the experimental posture, which was brought about by changing the dynamic balance of the head while the posture was being assumed, there was an increase in sitting height and decrease in head displacement, and also an increase in the activity of the sternomastoid. The subjects experienced feelings of weightlessness and effortlessness, in comparison with their habitual posture. In sum, in these studies a qualitative change of the body as a whole was noticeable.

Medical research also provided support for the Alexander Technique. Wilfred Barlow and David Garlick investigated the effects of the Technique on posture. Galick's (1933: 11) studies confirm the common occurrence of poor posture claimed by Alexander in his work. Spine distortions, overarched neck, asymmetries of the shoulders, protruding abdomens, tilted pelvises, and hyper-extended knees were common among his subjects. Garlick (1933: 13, 73) confirmed the benefits of the Technique, emphasising that it reawakens the kinaesthetic senses. Barlow's research examined deeply the relationship between muscle tension and anxiety. He observed subjects moving from standing to sitting positions and measured the length of their necks during this activity; he confirmed Alexander's finding that, in the majority of cases, 'there is an alteration in the position of the head which is thrown back...[and] the kinaesthesia was so untrustworthy a guide that it led them to do the very opposite of what they wished to do or thought they were doing' (Barlow, 1946: 12). These results were confirmed in latter experiments (Barlow, 1947, 1954, 1955). Barlow (1964: 494) also dealt with posture and functioning, and found 'patterns of dystonia', in which 'states of excessive tension and unbalanced coordination opposes a balanced resting state'. Barlow's research (1955; 1959a; 1959b; 1964) provides numerous photographs of subjects who presented patterns of dystonia. After receiving lessons in the Alexander Technique, the subjects were able to change such patterns considerably. More discussion of Barlow's comments on muscle tension and anxiety will be offered in Chapter 3.

Stevens (1995) conducted experiments, when seeking to provide a scientific explanation based on physiology and the mechanics of movement for the effects of the Technique on practitioners. In studies of postural sway, he examined the influence of leg position on balance and on guided and unguided movements in sitting and standing. Overall, Stevens (1995: 23) found that Alexander's guided movements and the standard position of the legs (thighs horizontal and calves vertical) increased the efficiency of the sit-to-stand movement. The Alexander Technique also had beneficial effects on posture, increase in height, some physiological functions, and movement patterns, and subjects showed increased awareness of their proprioceptive senses (Stevens, 1995: 41-2, 48).

Research on the application of the Alexander Technique to educational settings has also been conducted. Overall, it was found that postural misuse is evident in school children and indicates poor use of the body. Mathews (1984) investigated schoolchildren's postural situation and examined their reaction to the Alexander Technique in New York, and found that a distorted posture was the norm for these children. At the age of six, some children already tended to react to stimuli with excessive tension. For instance, children would persist in helping Mathews to lift up their arms (Mathews, 1984: 17), or adopt tense positions when asking questions to teachers, with the clear expectation of receiving a positive answer (Mathews, 1984: 24). Mathews (1984: 11) attributes this problem to factors such as the passivity that some activities require from children (e.g. watching television), the imitation of adults' bad use, and the stressful settings to which children are exposed (e.g. in school). Children's reaction to the Alexander work was positive: 'they loved it', writes Mathews (1984: 30). The children seemed to have 'an appetite' for this kind of work, in which they got information about themselves and were restored to a more balanced and integrated state (Mathews, 1984: 31). According to Mathews (1984: 36), her experience with children showed that:

> ...children will be more aware, more integrated, and incidentally learn better, if in the process they do not lose that delicate awareness of balance and efficient Use of the whole organism that they have achieved unaided in gaining the upright human stature.

Nuttal (1999b) investigated to what extent knowledge of the Alexander principles can help primary teachers to evaluate school children's postural situation in England. The teachers involved in the study examined the children's postural attitudes in sitting positions on the chair and on the carpet, and in writing positions. The study shows a marked deterioration of the children's postural integration during their daily lessons. For instance, most children gradually tended to collapse, pulling their heads back and down, slumping their backs, and squashing their bodies whilst sitting down, which gave an impression of physical distress (Nuttal, 1999b: 71). The teachers attributed the children's postural deterioration to diverse factors, such as the inadequacy of the school environment (the small space for the number of children, which restrains their movement); the inadequacy of furniture (inappropriate size of tables and chairs which brings about pupils' couching or hunching over the tables); the children's psychological state (children tended to come up if engaged in an activity, and collapse if tired or not engaged); and the length of time for which children are required to be seated in cramped conditions during the school day (children spend the majority of their time sitting down) (Nuttal, 1999b: 72). In another paper, Nuttal (1999a: 87-99) writes:

> Some aspects of early schooling may have adverse effects on children's posture and the relative ignorance of many teachers about this matter may be a contributory factor. Teachers are not sufficiently skilled to note anything other than gross physical distortion occurring in their pupils because it requires an expert eye to detect it. Whilst children may be advised on how to hold a pencil, for example, the focus tends to be on the hand itself rather than the effect on the whole body alignment.

Alexander himself worked with children, as he was convinced that the prevention of bad use was a matter of education at home and in school. His concern with children's psycho-physical education is emphasised in his writings. He established a school for young children in London from 1924 to 1940, 'The Little School', in which children were encouraged to make good use of themselves whilst working on their school tasks, assisted by Irene Tasker and subsequently by Margaret Goldie. The school was withdrawn from London to the United States due to the Second World War.

Investigations on the effects of the Alexander Technique on music students have also been conducted (e.g. Armstrong, 1975; Lewis, 1980; Lloyd, 1986; Stevens, 1995; Valentine *et al.* 1995; Head, 1996; Bosch, 1999; Santiago, 2001). Some aspects and findings of this research will be presented in Chapter 3.

2.6 Procedures and application of the Alexander Technique

The Alexander practice involves the experience of its principles, as mentioned previously. They can more easily be experienced through the adoption of procedures, which help practitioners to adopt 'mechanical advantage'. Mechanical advantages are 'dynamic configurations' (Robb, 1999: 180), or 'conditions' (Carrington, 1999: 39), which exclude the idea of fixed or static positions, making for rigidity. Alexander (1995: 93) states that there is no correct position, but correct coordination of the muscular mechanisms; besides, if people's coordination is correct, it is possible to readjust the parts of the body according to the needs of different bodily positions.

To be in mechanical advantage involves a resurrection of the 'primary control' (Eyal in Frederick, 1999: 134), which means a correct use of the head-neck-trunk relationship. Mechanical advantage positions facilitate the lengthening of the muscles and a proper coordination of the body's musculature (Carrington, 1999: 39; Robb, 1999: 179). They also facilitate the breathing processes (Alexander, 1995: 93; Jones, 1976: 21), and the prevention of the harmful falling of the upper chest at the end of expiration (Alexander, 1995: 96). The lengthening of the spine and the widening of the back are encouraged; the stiffening of the neck and of other parts of the body is more easily reduced (Jones, 1976: 21). In sum, the positions with mechanical advantage facilitate the balance of the organism and provide freedom of movement, helping practitioners to improve their general use and functioning.

In the Alexander practice, to help practitioners to come into mechanical advantage, some typical positions and movements are adopted, such as change from sitting to standing, lying down in a semi-supine, monkey position and the lunge, hands on the back of a chair, walking, and crawling. The two first of these are the most relevant to this study, and will be presented in some detail below, followed by comments on the application of the Technique to daily activities. An example of a typical Alexander lesson, which includes these two procedures, can be found in the CD Rom 1, 'Alexander lessons'. In Appendix 1, other two Alexander procedures can be found: monkey position and hands on the back of the chair can be found

2.6.1 Sitting and standing

Coghill (in Alexander, 1941: xxii) states that rising from chair sitting position to standing position (sitting and standing) is far from being a natural pattern of behaviour, as sitting on a chair was introduced into human life very late, and is 'the most atrocious institution…of civilized life'. He also claims that:

> …habitual use of the chair …prevents [the] stretching of the extensor muscles and tends to produce adduction of the thighs, even to the extreme of crossing one leg over the other. This unnatural posture tends to stimulate reflex responses which antagonize the normal total pattern of rising to a standing position (Coghill in Alexander, 1941: xxii-xxiii).

The Alexander experience shows that people easily increase muscular tension in the organism whilst sitting and standing. They typically pull the neck back and down and slump the spine. Besides, the arms may be employed in order to help the movements. In the words of Alexander (1923: 189):

> …the subconsciously controlled person, as soon as he touches the chair, instead of allowing it to support him, proceeds, as he would say, to "sit down" - that is,

to make certain unnecessary movements and alterations in the adjustment and general condition of the organism, involving that imperfect use of the mechanisms which he subconsciously employs in order to seat himself…This means that he has performed the act of "sitting down" in accordance with his subconscious concept of it.

As sitting and standing requires the participation of many joints of the body, people's patterns of bad coordination are revealed (Gelb, 1981: 146). In order to consciously change these patterns, the stimulus of sitting and standing in habitual ways is inhibited (Alexander, 1941: 76). Alexander pupils can then, with the teacher's help, direct their movements in a new way: to sit down, they can order the hips to move backwards and the knees to bend, so that the body can incline forward; to stand up, the hip-joints act as a hinge, bringing the body to an upright position. This is to be done without shortening the back, stiffening the neck and pulling the head back and down (see picture 2.2). In so doing, the entire spine is mobilised, the spinal joints and spinal nerves are activated, and the circulation is stimulated (Carrington, 1992: 89).

Picture 2.2: F. Matthias Alexander with hands on man (sitting and standing). *Source: STAT Archives – Picture Catalogue.*

2.6.2 Lying down in semi-supine

In the Alexander practice, table work is synonymous with lying down in semi-supine position. Practitioners often lie on a table or, alternatively, on the floor. In this position they rest the back on the surface of the table, and the head is supported by a number of books; the legs are bent at the knees, the feet make contact with the floor, the arms are bent at the elbows, and the palms of the hands rest on the abdomen (see picture 2.3). Carrington (2001: 29) explains that, in the early Alexander Technique training courses, table work was regarded as 'standard practice' for all students, but Alexander would never work on pupils on the table; instead, he would call his assistants to do this job. Jones (1976: 6) seems to consider that table work is a less valuable procedure than chair work, as he states that:

> Some teachers ...prefer to eliminate gravity as much as possible and to work with the subject lying on a table, manipulating the various parts of his body while he inhibits his habitual responses to stimulus to move. So far as I know, the Alexander brothers never did "lying-down-work" of this kind unless they had a pupil who was bedridden. In my observation, it gives a wrong first impression of the Technique, as if it were a form of relaxation therapy.

However, if table work is not misunderstood, on being taken as a 'relaxation' work, it can provide great benefits to Alexander practitioners. The spine is no longer supporting the weight of the body, thus it can lengthen and widen (Carrington, 1992: 85). Table work can also increase the sense of grounding, as it promotes the contact of the head, back, and feet with the floor or table, thus providing a chance for practitioners to minimise muscular effort. It also gives practitioners a chance to practice non-doing, enhancing their inhibition abilities. As Carrington (2001: 107) emphasises, 'lying down is very much about non-doing. You lie down not to do'. Finally, table work facilitates the establishment of relationship among segments of the body through the conscious mental intention of enhancing the antagonistic pulls among segments.

Picture 2.3: Woman with hands on man lying down on semi-supine. *Source: Gelb, 1981: 40.*

2.6.3 The application of the Alexander Technique

Because the person is 'the instrument' (Carrington, 1970: 14), the Alexander Technique can be applied to all skills and activities (Alexander, 1941: 50; Carrington, 1970: 14). Thus the success of the Technique depends on practitioners' experience in the use and functioning of their organism, and in the application of these experiences to living itself (Alexander, 1941: 95). In applying the Technique to living,

> ...any reasonable standard of physical development can be attained without fear of producing harmful by-products, and the act of living itself will become a constant means-whereby changes in the direction of more and more desirable physical development can be brought about (Alexander, 1941: 51).

Other writers on the Alexander Technique also emphasise its applicability in daily life[1]. Alexander offers several examples of the application of his technique. In *The Use of the Self* (1932), he offers an analysis of the stutter. Latter he writes about the

[1] See Macdonald (1989), Gelb (1981), Ben-Or (1988, 1995, 1998), Dimon (1998), Tasker (1967), Jones (1998, 1976, 1974, 1968), and Frederick (1977).

golfer who cannot keep his eye on the ball. Other examples of application of the Technique to back pain, sciatica, damaged necks, asthma, and spasmodic torticollis are presented in *The Universal Constant in Living* (Alexander, 1941).

Dewey (in Alexander, 1923: xxviii) calls attention to the application of the Technique as an educational and preventive instrument:

> [Alexander's] discovery could not have been made and the method of procedure perfected except by dealing with adults who were badly coordinated. But the method is not one of remedy; it is one of constructive education. Its proper field of application is with the young, with the growing generation, in order that they may come to possess as early as possible in life a correct standard of sensory appreciation and self-judgement.

Applying the constructive education to which Dewey refers, Laub (in Armstrong, 1984) and Tasker (1967) worked with young pupils, combining lessons in the Technique with its application in the school classroom. However, the Technique is not a universal remedy for all the problems and difficulties that people encounter in activity (Tasker 1967: 29; Carrington, 1970: 14; Gelb, 1981: 110; Ben-Or, 1998: 29). This is firstly because the force of old habits is usually overwhelming (Gelb, 1981: 110). Secondly, any activity generates an appeal to 'end-gaining'. As Alexander (1923: 196) explains, an understanding of the cause-effect relationship in connection with the functioning of the organism is primary; from this, the individual can consider the cause-effect basis of everyday problems. So the application of the Alexander principles to daily life comes as a consequence of such improved use and functioning, and it depends on a profound understanding of its principles, requiring patience and persistence (Ben-Or, 1998: 29). The work needs to be slow; if 'ideas spread more quickly than they are rightly understood, there is a danger that they lose in depth' (Tasker, 1967: 29).

2.7 The Alexander teachers' approaches

The main approach adopted by Alexander teachers to communicate the principles to their pupils is putting hands on them. Alexander teachers also talk to pupils. Demonstration and imitation may also occur, as we shall see in the following paragraphs.

2.7.1 Putting hands on pupils

The eyes alone may fail to detect what is going on with Alexander students (Nicholls, 1991: 43; Benham, 1993a: 6). So Alexander teachers are trained to develop sensitive and non-doing hands, or, as Nicholls (1991: 43) calls them, 'sensing and listening hands'. Putting hands on pupils allows Alexander teachers to achieve a threefold purpose. Firstly, they can sense what is happening to pupils, sensing their manner of use (Carrington, 2001: 114; Alcantara, 1997: 85). For this to happen, Alexander teachers put hands on their pupils and give themselves time, so that they can be in touch with pupils, observing and diagnosing their conditions. They can recognise if pupils are stiff and fixed, floppy, collapsed and going down, or if they are light and free (Carrington, 1996: 24). Secondly, by using their hands, Alexander teachers can prevent pupils' misuse. If stiffness and rigidity are perceived, teachers can give pupils a stimulus to stop stiffening, thus releasing the tension (Carrington, 2001: 114). Teachers' hands indicate to pupils where tension is, informing pupils about their manner of use (Benham, 1993b: 5; Williamson, 2003: 5). Thirdly, with their hands, Alexander teachers can encourage directions to happen (Carrington, 1996: 25). If teachers are able to help pupils to free their necks, pupils' heads can be directed forward and up, and their backs can lengthen and widen. Pupils' thoughts should work in association with the teacher's hands, in order to establish the new pattern of use of the 'primary control' (Westfeldt, 1998: 35).

Macdonald (1989: 9) and Page (1984: 6) explain that Alexander teachers do not intend to pass their sensory experience to pupils, but enable them to become aware of the sensory possibilities that already exist. Alexander teachers do not 'do' things to pupils with their hands, but encourage pupils to do things for themselves (Macdonald, 1989: 34; Carrington, 2001: 114). As stated previously, Alexander teachers are not manipulators (Holland, 1978: 4; Carrington, 1989: 4; Carrington, 2001: 114), but a kind of expert manipulation happens, 'to give to the pupil the new sensory experiences required for the satisfactory use of the mechanisms concerned' (Alexander, 1923: 96). Jones (1976: 5) offers his own account of the effects of Alexander teacher's hands on pupils:

> Applying a light pressure with his hands, the demonstrator changes the balance (or poise) of the subject's head in such a way that the muscles in the nape of the neck lengthen, allowing the head to rotate slightly forward as it moves up from the shoulders. Care must be taken not to set up a stretch reflex in the muscles by using too much pressure or applying pressure too rapidly. Properly carried out, the procedure will establish a new dynamic balance between the weight of the head and the tonus of the muscles so that within a limited range (greater in some subjects than in others) the head behaves like an inertial system which can move or be moved freely in any direction without a feeling of weight.

2.7.2 Talking to pupils

Alexander teachers may use oral communication with two purposes: to give pupils feed-back and guidance, and to give preventive orders. In the first case, oral communication may help pupils to understand something about their habitual interferences and reactions (Gelb, 1981: 64), and to clarify pupils' thinking processes. Besides, through words, the sensory experiences provided by the Alexander work can be transmitted to pupils (Tasker, 1967: 22). Oral communication also provides guidance concerning what the teacher wants the pupils to do, and, more often, what teachers want students *not* to do (e.g. not to pull the head back and down). Oral communication is also adopted in the formulation of the directive order, as described

earlier (e.g. 'let your head go up and forward'). However, such communication is not the best means for transmitting new sensory experiences.

Jones (1976: 162) states that the reward provided by the Alexander practice to pupils is intrinsic to the work itself, as pupils become able to develop new responses to stimuli. His view is that oral blame or praise from teachers can bring an extraneous factor to the Alexander work (Jones, 1976: 162). This is certainly an interesting view, as such blame or praise could enhance an undesirable 'end-gaining' tendency in the Alexander lessons. It is wise, perhaps, not to take this view as law, because oral feed-back from teachers and colleagues may be an important factor that promotes clarification and motivation in this work, as it would in any other educational setting.

2.8 Alexander teachers' and pupils' roles

The determining factor that makes good Alexander teachers is their own use (Jones, 1976: 153; Nicholls, 1991: 54; Carrington, 1994a: 98; Gelb, 1981: 64-5; Williamson, 2003: 5). Teachers need to assume a psycho-physical attitude which provides strength without tension and a high degree of sensitivity (Westfeldt, 1998: 34). As Gelb (1981: 146) remarks:

> Good Alexander teachers do not need perfect poise, but rather, sufficient experience in working on themselves to be able to guide others successfully. In addition to skill in using their hands to guide [pupils] toward improved use, good Alexander teachers demonstrate the characteristics shared by good teachers in all disciplines: patience, compassion, humour, creativity and a commitment to bring out the best in [pupils].

Concerning their relationship with pupils, the Alexander teachers' role is that of observers (Tasker, 1967: 12; Alcantara, 1997: 161), and facilitators (Lewis, 1980: 72). The power of observation helps Alexander teachers to make a diagnosis of the pupils'

situation. As facilitator, teachers give pupils the correct sensory experience which allows pupils to adopt the best means-whereby to perform actions (Alexander, 1910: 158). In sum, an Alexander teacher 'helps the students to develop the tools for learning by communicating an experience of improved use and an understanding of the role of inhibition and direction in bringing it about' (Gelb, 1981: 147).

In addition, Alexander pupils need to recognise that their defects need eradication (Alexander, 1910: 55). Pupils also need to be active participants in the processes of learning, instead of depending passively on a teacher's help (Jones, 1976: 157). As Carrington (1994a: 44, 48) claims,

> ...the active participation that is required is not muscular activity, but is the active participation of thought and awareness...the Technique is about [pupils'] active participation. The Technique is something that they operate and activate for themselves...it is a means of self-help in that way.

So taking responsibility for oneself is essential (Barlow, 1997: 17). Pupils' attentiveness is indispensable (Jones, 1976: 163), because they need to keep freedom and mobility as much as possible during activity, returning to a balanced state after extensive muscle activity (Barlow, 1973: 171). Besides, patience, self-discipline and a good dose of persistence are further essential qualities of the Alexander practitioner, who needs to 'enjoy the hard work and thought' that this practice requires. (Williams, 1982: 10).

2.9 Ethics in the Alexander Technique

The literature on the Alexander Technique does not offer extensive comments on the ethical problems that teachers may have to deal with since they put hands on pupils. A comment in this respect is offered by Spawforth (in Taylor, 2000: 117):

> Someone was talking about [Alexander's] first time in London where women all wore corsets and he couldn't work on them. They had to go to the bathroom and take their corsets off! And of course, a lady would never have a man putting his hands on her unless he was medically qualified or her husband. So here was a man from Australia who was going to take hold of their bodies! Can you imagine what a shock that would have been for some people? To some extent you get it with pupils now, particularly with what you might call "spinsters". They are very apprehensive: here is a man, he's not a doctor, and he's going to put his hands on my body! But of course, people are reassured by good hands.

Carrington points outs other important ethical issues raised by the Alexander Technique. He reminds us that teachers are not qualified to help pupils to solve all kinds of problems and difficulties, so they should not interfere with pupils' private lives - their emotions, thoughts, feelings, beliefs and attitudes (Carrington, 1994a: 113). Alexander teachers are not healers or therapists (Carrington, 1994a: 116). They should not adopt a confrontational or aggressive attitude towards their pupils, as such an attitude is ineffective and counterproductive (Carrington, 1994a: 116-7).

Summary and conclusion

This chapter has outlined a comprehensive view of the Alexander Technique. Explanations provided by Alexander himself were offered throughout the chapter, as well as the contributions of the most relevant writers on the Technique. It has been shown that the Alexander Technique is a process of re-education of the use of the psycho-physical self; it involves a new and improved coordination and balance of the human organism as a whole on a plane of constructive, conscious control. This re-education deals with the inhibition of habitual harmful patterns and the instalment of new directions for the use of the organism. These two principles - inhibition and direction - lie at the heart of the Alexander work, and are practised through simple activities, such as sitting and standing, and lying down. The chapter has also shown

that the Alexander Technique has been supported by scientists, educators, doctors, and researchers. Additionally, other aspects of the Alexander Technique, including procedures, application, pedagogical approaches, teachers' and pupils' roles, and ethical issues have been also presented.

The discussion in the preceding chapter, concerning the piano pedagogues' aims and concerns, showed that they want to achieve a natural way of playing the piano, without excessive tension and effort. Under the Alexander perspective, however, some limitations of piano pedagogy emerge, and the piano pedagogues can be questioned in the following ways:

- Piano pedagogues tend to emphasise a way of understanding piano playing in terms of trunk, arms, hands, and finger activity, and correct motion patterns, adopting procedures that fail to consider that *piano pupils are psycho-physical selves, and their manner of use will influence their piano activity for good or ill.*

- *Instead of considering the educational aspect of piano playing, piano pedagogues emphasise its 'end-gaining' aspect.* The final product - a fine piano performance - is the ultimate goal. Successful achievement is always the surest recommendation. As end-gainers, the pedagogues do not consider that *the pressure to achieve such ends may result in physical injuries and psychological difficulties.* They do not address pupils' difficulties and do not indicate how piano teachers and pupils can deal with such difficulties.

- Piano pedagogues emphasise oral approaches without addressing *the necessity of providing to pupils a direct sensory or kinaesthetic experience concerning the movements at the piano. This kind of approach may lead pupils to react by trying to 'do' something.* For instance, if teachers suggest that pupils should relax their shoulders, they may pull the shoulders down instead.

Conversely, the Alexander Technique focuses on how people misuse themselves in ways which interfere with the effective carrying out of the task in hand. The Technique also focuses on 'undoing, 'non-doing', and 'doing less'; this is the opposite of the most typical approaches adopted by piano pedagogues. If the Technique reinforces piano pedagogues' search for a natural way of playing the piano, it may also help to implement piano teachers' ideas, by helping them to deal with the psycho-physical difficulties that piano pupils may have. The Alexander principles may also help piano teachers to review their modes of teaching, approaching piano pedagogy from a different perspective. The potential philosophical implications of the Alexander principles to piano pedagogy will be dealt with in due course. For the moment, a discussion of musicians' psycho-physical and musical difficulties will provide a framework in which to put piano pedagogy and the Alexander Technique side by side, connecting the fields.

Chapter 3

Connecting Piano Pedagogy and the Alexander Technique

Introduction

So far it has been argued that the piano pedagogues' goal is to guide pupils to play as naturally and efficiently as possible, whilst Alexander practitioners look for good balance, coordination, and the effortless execution of daily activity. Many outstanding pianists exist, and, in Alexander's terms, some have good use of the self in performance. As Macdonald (1989: 47-8) states, the head-back-neck relationship 'is something that happens naturally and of its own accord in those lucky few who are naturally well coordinated'. Arthur Rubinstein was a paradigmatic example of this natural coordination in piano performance (Alcantara, 1997: 135-287; Fonseca, 2002: 7). Many jazz musicians also present this 'amazing facility…based on the co-ordination of all the factors of producing music' (Whiteside, 1951: 25; 1969: 31, 57).

Other great pianists use themselves badly, in Alexander's terms, without, however, compromising their exceptional control of the instrument. For instance, Wladimir Horowitz had a particular way of using the hands, with excessive finger articulation (Menegale, 2002: 14), whilst Eugeny Kissin presents all sorts of postural unbalances, tension in his hands and face (Fonseca, 2002: 8), excessive finger articulation and

raised fifth finger, also pressuring the keys down more than necessary (Hazan, 2002: 8). We must accept these habits as 'eccentricities', says Hazan (2002: 10). To Alexander (1910: 80), 'the artist succeeds in spite of these impediments to expression, and not because of them'. So, perhaps, the 'good use' advocated by Alexander is not a *sine qua non* for expert musical performance.

However, the examples of these and other exceptional pianists cannot be a reference for piano pedagogy (Menegale, 2002: 14), as many professional and amateur musicians present disorders that impair their musical progress or even lead them to abandon playing. Most piano teachers may not be prepared to deal with such problems when they occur, and the piano literature does not address this issue, as stated previously. So it is necessary to look at research that deals with the disorders that professional musicians, especially keyboard players tend to present. To facilitate, throughout this chapter, the term 'musicians' will refer to both professionals and music pupils.

The first section of this chapter presents the psycho-physical problems of musicians. In sub-sections, a selection of the medical research on musicians' physical disorders and some pieces of research on musicians' performance anxiety are considered. Discussions on the potential reasons for such problems are provided, based on: (1) the Alexander principles related to the view of human physiology offered by the French physiotherapist Marcel Bienfait (1995); (2) and the Alexander principles related to the view of human psychology offered by the psychotherapists Alexander Lowen (1981) and Stanley Keleman (1992). A second section discusses the potential performing and music learning difficulties that musicians may have, based on the piano pedagogues' comments, and followed by complementary comments based on the Alexander principles. A third section offers musicians' informal reports and research on the effects of the Alexander Technique on instrumental playing. Based on the ideas presented in the previous sections, a fourth section introduces and justifies the criteria for assessing piano pupils' problems which will be adopted by this study in subsequent chapters.

3.1 Musicians' psycho-physical problems and their causes

Alexander (1932: 54) was quoted in Chapter 2 as saying: 'the unity of the human organism is indivisible'. The mental, emotional, and physical processes form what Alexander calls 'the psycho-physical self'. Research points out two prevailing problems which impair musicians' work: physical disorders, especially the so-called 'overuse syndrome'; and emotional difficulties, especially 'anxiety performance'. In Alexander's perspective, these problems are 'psycho-physical', thus related to each other. However, for sake of clarity, this section will discuss them separately, establishing relationships between them in the commentary offered to explain their potential causes.

3.1.1 Musicians' physical disorders

As anybody else, musicians are vulnerable to all sorts of injuries, such as fractures, dislocations of joints, or degenerative joint diseases. But according to Fry (1986a: 621), they are second only to writers in the recorded frequency of an occupationally-related disorder referred to as 'overuse syndrome' or 'repetitive strain injury', umbrella terms for a number of conditions (e.g. tenosynovitis, enthesopathy, and muscle-tendon strain). This disorder involves the use of muscles beyond their natural capacity, causing muscular and nerve fatigue (Fry, 1986a: 621; Andrade and Fonseca, 2000: 120; The Edinburgh Physiotherapy Centre, 2003: 1). Symptoms of the overuse syndrome in musicians are cramp, a painful muscle spasm; pain in the upper limbs (especially hands and wrists) and spine; weakness and loss of response and control which leads to bad coordination, diminished accuracy and agility, and decreased technical skills; and swelling during performance (Fry, 1986a: 621-2; 1986b: 182-3).

Together with string players, keyboard players are the most affected by physical disorders (Fry, 1986b: 182-3; Dawson, 2001: 152; Warrington, 2002: 131). Poor (in Fry, 1986a: 624) states that the rigidity of wrists and fingers adopted in the Stuttgart school of piano playing in the 19th century was what produced muscle strain in the

affected patients. Many pianists who presented specific hand injuries were removed from their professional positions (Merriman *et al.*, 1986: 17).

Merriman *et al.* (1986) investigated pianists' right-hand disorders (tendonitides, dyssynergias) due to overuse, which provokes disorder of motor control, especially of the fourth and fifth fingers. Pianists presented difficulty in clearing the fourth and fifth fingers from the keyboard; a tendency to bury these fingers in the palm; laxity of the extensor tendons and palmar curling of both fingers; the abduction of the fifth finger; and loss of control and precision, followed by the sound of the fingernails hitting the keys (Merriman *at al* 1986: 18). Two patients had atrophy of the finger extensor musculature, which was especially noticeable in playing octaves (Merriman at al 1986: 18). Two other studies by Sakai (1992, 2002) examined pianists and students in Japan with similar problems, caused by overuse due to the excessive practising of specific keyboard requirements such as octaves, chords, fortissimo, arpeggios, and widely extended passages. These pianists experienced pain on their hands, wrists, elbows, and forearms. In the majority of cases, these problems were associated with abduction of the thumb and the fifth finger, and fixation of wrist joints.

Some piano pedagogues confirmed the existence of pianists' disorders. Levinskaya (1930: 5) reported having suffered cramp (spasm, pain, and contraction) and having to deal with pupils who presented similar problems. Grossman (2002: 4) reports her physical problems during long practising sessions - spine problems, discomfort, pain, and the consequent agony that accompanied these symptoms, as her practice was impaired. Fonseca (2002: 15) points out the most typical postural problems presented by pianists: head projected forwards, trunk flexed forwards, and raised shoulders, with excessive secondary tension in the elbows and thumbs. Pianists also tend to fix the lumbar area musculature, which imposes great tension in the legs (Fonseca, 2002: 15). These specific contractions guide to a 'long-term chain of contractions', causing generalised tension in the organism (Fonseca, 2002: 14-5). These harmful habits may be factors related to the pianists' disorders, and may also prevail in young piano pupils, as will be demonstrated in Chapter 5.

Other factors that may provoke overuse of nerves and muscles are sustained muscular contraction, repetitive, fast, and skilled movements of the hands, abrupt resumption of practice after a long interruption, and hard practice of difficult pieces (Fry, 1986b: 183); this corresponds to the practice of specific keyboard requirements, as mentioned above. Additional factors are increased practice before examinations or recitals, increase in playing time, and change of teacher (Fry, 1986b: 183; Warrington at al, 2002: 131). The application of received theories of technique without considering individuals' anatomical differences may also cause injuries (BPAMP talk, 2003: 3). And more: bad habits developed due to faulty technique (Andrade and Fonseca, 2000: 120-2; Warrington *at al*, 2002: 131), organic and joint diseases, and psychological problems contribute to the emergence and aggravation of muscular stress (Andrade and Fonseca, 2000: 120-2).

Medical researchers have suggested different kinds of treatments for musicians' disorders. Pianists were advised to avoid risky posture during practising, as well as the use of specific techniques and stretching exercises (Sakai, 1992: 63-4, 2002: 180), and (Yee, 2002: 81). Some musicians took xylocaine injection and steroids (Sakai, 1992: 63-4), and reported taking anti-inflammatory drugs and muscle relaxants with little relief (Fry, 1986b: 183), whist others underwent surgical treatments (Fry, 1986b: 183; Dawson, 2001: 155). Musicians also developed coping strategies to deal with pain (Yee, 2002: 80). The treatment considered the most effective one is absolute rest (Fry, 1986a: 623; 1986b: 183; Sakai, 2002; 179). However, prevention of overuse is basic (Warrington at al, 2002: 133). Fry (1986b: 183) suggests that:

> The prevention of overuse is the control of use. A student or a performing musician should limit practice segments to an arbitrary 20-30 minutes. A five-minute break will then allow the muscle and joint ligaments to recover so that they are more responsive at the beginning of the next practice segment, as well as being rested and therefore less fatigued.

According to Merriman *at al* (1986: 18), overuse syndrome is a localised and non-progressive phenomenon. Sakai (2002: 180) claims that musicians who suffer from

overuse syndrome should focus on the cause, especially on the specific movements of the upper limb. Other researchers have a holistic view of the problem, considering that musicians' localised disorders are connected with their overall postural condition (Colman, in Fry, 1986a: 623; Andrade and Fonseca, 2000: 120-2; Yee, 2002: 76-7, 81; Warrington *et al.*, 2002: 133). A document distributed at a BPAMP talk (2003: 3) endorses this view, attributing pianists' excessive tension to poor posture and unsuitable seating, which results in neck, back and shoulder pain, excessive lifting and abduction of the fingers, fixation, deviation, or extreme positions of the wrists (too high or too low). Besides, researchers report that musicians felt depressed due to their physical symptoms (cramp, pain, and loss of control), and this depression tended to aggravate such symptoms (Fry, 1986b: 183; Kimber in Fry, 1986a: 623).

As will be demonstrated, the view of the Alexander Technique supports the idea that musicians' localised physical disorders, whether occupationally derived or habitual in nature, are symptoms of poor use of the entire postural mechanism, and are associated with the emotional aspect of the psycho-physical self.

3.1.2 Bienfait's and Alexander's view on postural problems

The human postural mechanism relies upon the skeleton and on the appropriate tonus[1], being maintained by what are commonly referred to as the postural muscles. This tension is referred to by Bienfait (1995) as the 'postural tonus'. Children gradually acquire their postural tonus over their first 8 to 10 years of life (Bienfait, 1986: 17). Bienfait (1995: 61-2) says that children's physical development is 'anarchist and unpredictable' because the rate of development of limbs and trunk is not precisely predictable, and children can establish good or bad postural tonus in the process of growing.

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[1] The words tone and tonus are used more or less interchangeably in the literature on physiology.

Children's vulnerability is real and is fully recognised in the Alexander Technique. In the Alexander perspective, children *learn* to misuse themselves. Imitation, for example, has a strong influence on children's development (Jones 1976: 27); postural misuse can occur because of the imitation of adults who are providing a bad example. Children easily imitate 'our tricks of manner and speech ...our carriage of the body, our performance of muscular acts, even our very manner of breathing' (Alexander in Jones 1976: 27). Children may also follow the prevailing fashions of the time, leading to a perpetuation of inappropriate bio-physical attitudes (Barlow, 1959: 296). Postural misuse is extremely common in young people and tends to increase with age (Alexander, 1923: 195; Barlow, 1959: 289).

The level of tonus affects all human movements and activities. Bienfait (1995: 13) emphasises that muscles cannot be considered as isolated functional entities, but as part of a holistic system that includes not just other muscles but also other body elements (conjunctive tissue, tendons, etc); these elements cannot be disengaged during movement. A simple gesture is generated by the activity of a group of muscles that complement each other in order to reach the final objective (Bienfait, 1986: 13). Every gesture or movement is global, bringing into action the entire functional system. Bienfait emphasises the importance of the relationship between head, neck, and trunk during movement; he states that head and eyes guide human's daily movements in space. The position and attitude of the head has a direct effect on equilibrium (Bienfait, 1986: 26). The position of the head, in turn, depends on the reflexes of the cervical area (neck) and the vestibular apparatus of the inner ear. In this connection, the neck must be free in order to enable the head and eyes to maintain their proper relationship to the body as it moves. Therefore, muscular imbalance in the cervical region will influence the scapular girdle and the entire thorax (Bienfait, 1986: 49).

These observations are reflected in Alexander's emphasis on the primary control - the head leads and the body follow. Jones' (1998: 121) research shows that the balance of the head has a profound influence on how muscular tension (or tonus) is distributed throughout the body. Barlow (1978: 16) states that the most typical misuse that can be found is an over-contraction of the neck muscles, causing loss of the free poise of the

head on the top of the spine (Barlow, 1978: 16), which leads to over-contracted trunk muscles with a lack of proper tonus in other supporting body muscles; the natural curves of the body become exaggerated and there is excessive pressure on the spinal column vertebrae and on the joints (Barlow, 1978: 16).

Lack of appropriate postural tonus can thus have a wide range of impacts on the optimum functioning of the body. Cervical imbalances result in bad scapular position. Bad pelvis positioning affects both the lumbar spine and the lower limbs and feet, and vice-versa (Bienfait, 1986: 67). Imbalances in the lower limbs bring about bad pelvic position which is compensated by the trunk (Bienfait, 1986: 29). Such compensations generate three typical spine deformities - scoliosis, lordosis, and kiphosis. These may be occasionally congenital, but overall are imbalances developed during the process of growing (Bienfait, 1986: 60). These deformities are characterised by excessive curvatures, and their gravity depends on the degree of their evolution, since they increase with age (Bienfait, 1986: 61-2). They usually appear together, as a compensation for each other (Bienfait, 1986: 66).

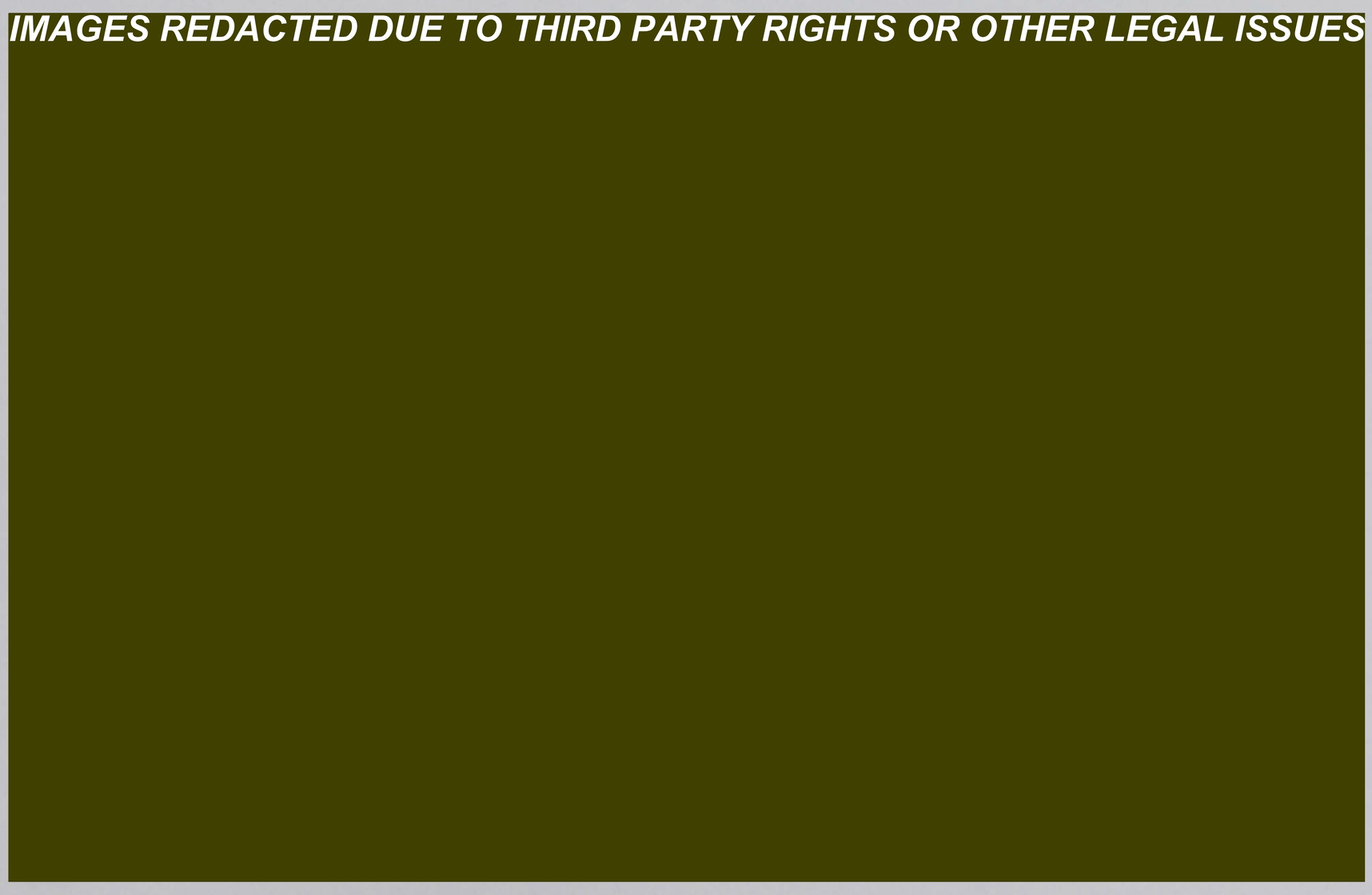
Lordosis is an exaggeration of the cervical and lumbar curves (Bienfait, 1986: 66). It can be recognised by the concave curvatures, and appears in the cervical and lumbar areas (pictures 3.1 and 3.2).

Picture 3.1: Cervical lordosis (lateral view). *Source:Barlow, 1973: 30.*

(a) (b) (c)

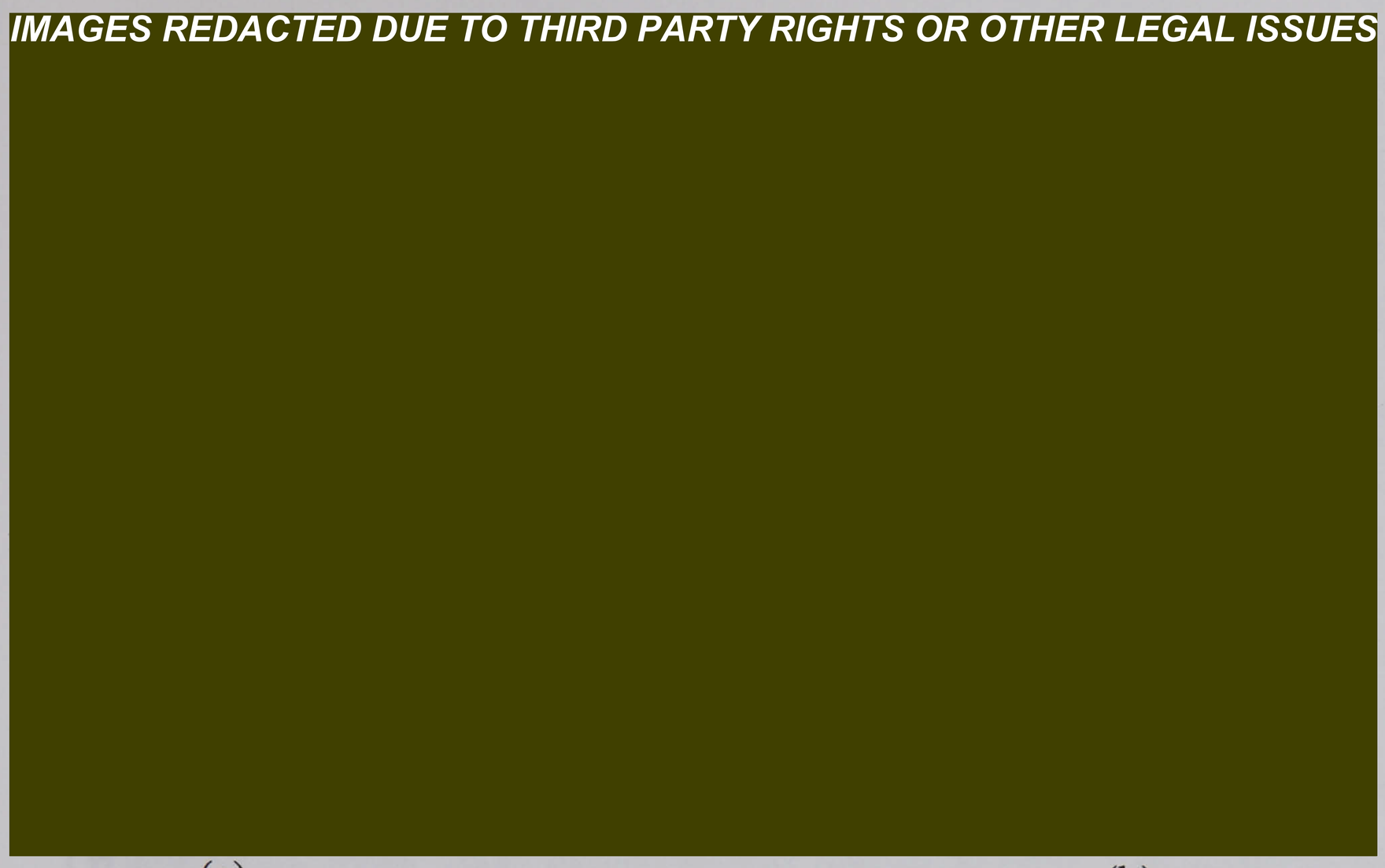
Picture 3.2: (a) Lumbar lordosis (lateral view). (b) Lumbar lordosis in schoolchild (lateral view). Compare with (c) Ideal condition of the spine (lateral view). *Source:Bienfait, 1964 109, 123; Barlow, 1973: 45; Sobotta and Figge, 1977: 15.*

Kiphosis can be recognised by the convex curvatures, and appears in the cervical, dorsal, and lumbar areas (pictures 3.3, 3.4).



(a) (b)

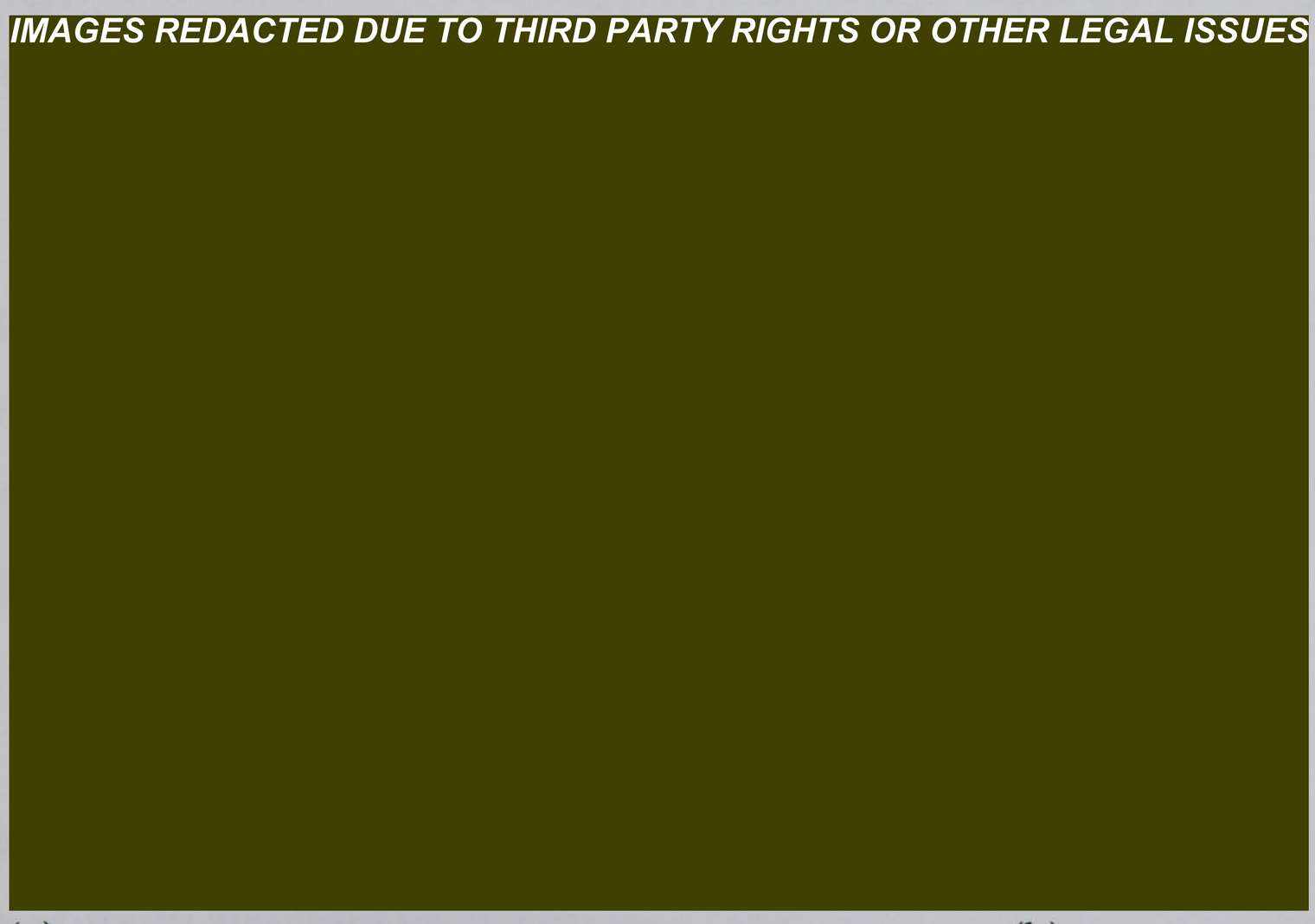
Picture 3.3: (a) Dorsal kiphosis (lateral view). (b) Lumbar kiphosis (lateral view). *Source: Bienfait, 1964: 109, 123.*



(a) (b)

Picture 3.4: (a) Dorsal kiphosis in schoolchild (lateral view). Compare with (b) Ideal condition of the spine (lateral view). *Source: Barlow, 1973:45; Sobotta and Figge, 1977: 15.*

Scoliosis is an inclination of the spine in three planes: lateral flexion in the frontal plane, lordosis or kiphosis, which appear together with it in the sagittal plane, and rotation in the horizon plane (Bienfait, 1986: 62) (picture 3.5).



(a) (b)

Picture 3.5: (a) Scoliosis with spine rotation and lateral flexion (frontal view). Compare with (B) Ideal condition of the spine (frontal view). *Source:Bienfait, 1964: 126; Sobotta and Figge, 1977: 15.*

Bienfait (1995: 24) points out that equilibrium is not static; when standing, the body constantly oscillates on its base. Positions, movements, and activities are undertaken within a controlled equilibrium, which involves constant imbalances, adaptations, and compensations so that people can keep equilibrium while moving (Bienfait, 1995: 24). In the Alexander Technique, this controlled equilibrium is referred to as balance, 'an equation of forces brought about by an interplay of the sensory and motor mechanisms' (Carrington, 1970: 5). Balance makes it possible for the organism to maintain the upright posture with the minimum muscular effort, providing lightness and freedom of movements, and the minimum expenditure of energy (Carrington 1996: 6-7). Although we all inherit a natural postural mechanism that allows us to keep the upright position (Waterhouse, 1996: 207), not all human beings develop and retain this in the optimum manner (Carrington 1970: 6). Some people reach such a state of misuse of their bodies that they constantly employ a tremendous amount of muscular contraction in order to keep their balance (Carrington, 1994a: 107). They attain stability at the cost of mobility (Carrington 1970: 6). As Carrington (1970: 13) states:

> Adequacy of balance and movement is not fixed by genetic inheritance, but is largely determined by the manner in which the machinery is used. Our choice in this respect is able to affect our functioning profoundly, according to the extent to which it is consistent or conflicts with the design requirements of the whole organism.

Balance of the organism is not to be achieved by force. Alexander practitioners achieve the proper functioning of the primary control through the use of inhibition and direction, allowing the postural mechanism to work to its best advantage, leading to better performance of activities.

Alexander himself avoided the word 'posture', as it entails an 'unhappy connotation', an idea of fixity and rigidity (Carrington, 1970: 9). It also entails the idea that there are right and wrong ways of positioning the body in specific situations (e.g. right or wrong sitting position). The idea of 'bad' posture may suggest that it can be changed from the outside, by doing something different (Barlow, 1978: 16). Besides, 'posture' is also an

emotive word, because pupils tend to react immediately to it, 'pulling themselves up and tightening' (Carrington, 1992: 123). People may feel anxious when conscious of postural faults, and they may 'try to be right' (Jones, 1998: 354), which does not solve the problem. If posture can be defined as 'the attitude of the body at any specific time' (Jones, 1976: 211), or 'the three-dimensional arrangement of the parts of the body which can be recorded by instantaneous photography' (Jones, 1998: 354), it is not a useful concept for Alexander practitioners, because movement is the most significant aspect of the Alexander Technique, not posture.

Taking into account the above discussion, the overuse syndrome and other physical problems that musicians may have are associated with misuse of the entire postural mechanism during practising and performing. Perhaps musicians overuse their playing-units' musculature to compensate for bad overall use and functioning. Or perhaps, as medical researchers emphasised above, the techniques required for specific musical passages are too demanding, exceeding the musicians' physical possibilities. If so, excessive tension in the rest of the body, especially the trunk, would probably occur, to compensate for the extra effort made by the playing-units. In any case, as Fry (1986b: 183) stated, 'the prevention of overuse is the control of use'; this indicates that musicians should alternate periods of practice with periods of rest. To Alexander practitioners, the same sentence assumes another connotation, as 'control' refers to *a conscious control of the psycho-physical self's reactions to stimuli.* If musicians do not possess such a control, because of faulty sensory appreciation and lack of self-awareness, they tend to work beyond their own physical limitations, achieving musical goals at the expense of themselves. To Alexander (1923:195), this is a matter of 'attitude'.

> The attitude of the human creature towards the functioning of his psycho-physical self, and towards the employment of this self in the activities of daily life, is the "be all and end all", and only those who possess the key to this storehouse of their psycho-physical experiences, inherited or acquired, can reach that stage of understanding of their psycho-physical reactions to stimuli which justifies an optimistic view of any efforts that may be made for man's uplifting.

This quotation and other uses of the word 'attitude' in Alexander's writings show that, for him, there is a psycho-physical attitude that involves a total pattern of response to stimuli, which includes:

- How people use their bodies - postural attitudes, for instance a stiffened, uneasy and unstable attitude, or the 'stand-at-attention attitude in vogue in the Army' (Alexander, 1910: 207);
- How people use themselves in activity - their attitude towards the employment of the psycho-physical self in the activities of daily life (Alexander, 1923: 195; 1941: 175);
- How people think - 'mental attitude' (Alexander, 1923: 195);
- How people feel: for instance - attitudes towards the things that people like or dislike (Alexander, 1910: 64);
- How people deal with the environment and with others - for instance, attitudes towards somebody's failings (Alexander, 1941: xxvii).

Carrington (2003) clarifies the term 'attitude' as used in the Alexander practice. He gives the example of the tennis player who adopts

> ...an attitude of mechanical advantage. It's a mechanical advantage, because it's an attitude that allows the player to move as rapidly as possible, in any required direction...The attitude is one of poise, one of readiness, one of freedom (Carrington, 2003: 1).

The tennis player's physical attitude is a reflection, a representation, or the outcome of his thought, feeling, and above all, of his intention, his wish; so attitude has to do with the anticipation of what is going to happen (Carrington, 2003: 1). Whilst good players have good anticipation, less good players anticipate wrongly (Carrington, 2003: 1). According to the Technique, in order to improve anticipation, and consequently to improve the way of reacting to stimulus, it is necessary to stop anticipating, stop doing

anything (Carrington, 2003: 2). The Alexander Technique experience shows that our typical response to stimuli may involve habitual harmful habits of stiffening the neck, pulling the head back and down (Carrington, 2003: 2). As Carrington (2003: 3) states, 'whatever we plan to do, whatever we need to do, the first consideration is the upward impulse, the upward direction'. The correct anticipation is the psycho-physical attitude of 'mechanical advantage', which includes uprightness, lightness, and freedom, and in the Alexander work people's correct attitudes are absolutely essential (Carrington, 2003: 4). Carrington (2003: 5) concludes saying that:

> How you are you going to deal with the situation, so as to give you a better chance, so that your anticipation may be more reliable? Well, general functioning depends very, very much on what we might call postural balance, on the working of the neuro-muscular system, that enables you to stand freely on your feet and so on. So that's clearly something that you got to look at. You need to see that, above all, in all terms, that you are going up rather than pulling down. That you are free rather than fixed. That you are breathing, rather than holding your breath.

Musicians who present an attitude of mechanical advantage in physical terms, and positive emotional and mental attitudes towards musical performance, reveal a state of readiness, self-confidence, motivation, pleasure, involvement, and attentiveness. Others overuse the playing-units and stiffen their bodies whilst playing. In Alexander's terms, not only the overuse syndrome but also 'performance anxiety' and its associates, - fear, distraction, lack of self-confidence, and physical tension, are symptoms of musicians' wrong psycho-physical attitude in relation to performance

3.1.3 Performance anxiety

Performance anxiety (stage fright) includes symptoms such as fear of making mistakes, and memory slips, leading to decrease in performance quality (Abel and Larkin, 1990:

171). It also involves a feeling of inadequacy, fear of loss of status (Craske & Craig, 1984: 268; Steptoe and Fidler, 1987: 242); distraction, lack of confidence, worry about tension; fear of other people's evaluation and disapproval of one's musical performance (Steptoe and Fidler,1987: 242; Kokotsaki & Davdson, 2003: 45). Additionally it involves negative thoughts about one's own performance (Craske & Craig, 1984: 268; Steptoe, 1989: 3). In sum, *fear* is a major factor underpinning performance anxiety. The piano pedagogues also indicate some factors that contribute to performance anxiety: fear of playing wrongly (Hazan, 2002: 16), fear of forgetting (Whiteside, 1961: 63; D'Abreu, 1964: 30), technical insecurity (Hofmann, 1910: 121; D'Abreu, 1964: 30); deficient musical preparation (Last, 1960: 133; D'Abreu, 1964: 30); and lack of attentiveness (Last, 1960: 133; Matthay, 1960: 175).

The most typical physical signs of performance anxiety are excessive physiological arousal that causes increased heart rate, a dry mouth, sweaty palms, a trembling bow hand for string players (Abel and Larkin, 1990: 171); trembling knees and hands tremble, lifted shoulders, stiff neck and arms, and moisted lips (Craske & Craig, 1984: 268-270); nausea, dizziness, trembling, and raised concentration of adrenaline and noradrenaline in the urine, hyperventilation, panic, and the feeling of a pounding heart and suffocation (Steptoe and Fidler, 1987: 241; Steptoe, 1989: 3). Sighs of excessive emotionality also occur, and may culminate in autonomic nervous system activation and worry about physical tension, distracting musicians from their task (Steptoe, 1989: 3-5). 'The emotional manifestations of performance anxiety are, in fact, the result of the individual's subjective realisation of the physical changes in him/herself' (Kokotsaki & Davidson, 2003: 46).

Kokotsaki & Davidson (2003: 46) identify two kinds of anxiety: 'trait' and 'state' anxiety. 'Trait anxiety' refers to transitory unpleasant emotional conditions, such as the disposition to perceive situations as threatening. 'State anxiety' describes consciously perceived feelings of tension and apprehension, associated with activation of the autonomic nervous system. Individuals with high levels of trait anxiety are more

susceptible to state anxiety than non-anxious individuals (Steptoe and Fidler, 1987: 242; Craske & Craig, 1984: 269-70; Abel and Larkin, 1990: 179). They tend to perform more poorly in front of audiences (Craske & Craig, 1984; Abel and Larkin, 1990: 172).

Lack of self-confidence is another factor associated with fear and anxiety, since musicians' negative self-perceptions before, during, and after performances may produce 'self-defeating thoughts and distress, diminished behavioural mastery and heightened arousal' (Bandura in Craske & Craig, 1984: 278). Steptoe and Fidler (1987: 244-5) indicate six typical attitudes: (1) catastrophising ('I think I am going to faint'); (2) positive thinking ('This concert is really going to be exciting'); (3) mixed strategy ('I'll just concentrate on staying relaxed'); (4) blasé attitude ('The audience won't notice the differences, however well I perform'); (5) realistic appraisal (I'm bound to make a few mistakes, but so does everyone'); (6) audience sensitivity ('I'll pretend the audience isn't there and that it's a rehearsal'). Catastrophizing statements to the self are more frequently used by musicians with high levels of performance anxiety (Steptoe and Fidler, 1987: 246).

Researchers have analysed musicians' strategies for coping with performance anxiety and low self-confidence. They reported using behavioural devices, such as taking sedatives and drinking alcohol before performance (Steptoe and Fidler, 1987: 243; Steptoe, 1989: 9). They also tried to distract themselves, engaging in deep breathing and muscle relaxation (Steptoe, 1989: 9), or in conscious manipulation of breathing control and positive thinking towards the self and the music (Kokotsaki & Davdson, 2003: 49). Moreover, musicians reported seeking professional counselling and consulting friends, parents, or teachers (Barney and Williams, 1989: 42-3). The above commentary suggests a connection between performance anxiety and musicians' mental and postural attitudes. This is confirmed by the psychoanalytical views of Lowen (1982) and Keleman (1992), and by the Alexander Technique, as will be demonstrated next.

3.1.4 Alexander and a psychoanalytic view on musicians' attitudinal problems

Why do musicians react to giving a performance with fear, anxiety, and insecurity? To answer this question, a first point to consider is Lowen (1982) considers the of the human body as an energetic system. Energy is involved in all processes of living, in movements, feelings, and thoughts (Lowen, 1982: 40). Human beings are not machines, and their activities should not be mechanically developed, as these activities are expressions of the self (Lowen, 1982: 43). When people are able to express themselves, feelings of satisfaction and pleasure will come as a consequence (Lowen, 1982: 43). Conversely, limitations of self-expression impair the development of a pleasurable and creative life (Lowen, 1982: 43). If one considers the body as an energetic system, sensations, feelings, and emotions can be taken as energies, moving within the organism, and interacting with the environment (Lowen, 1982: 46-7). So the quality of the emotional life and consequently the quality of self-expression in the external world depend on freedom in the flux of emotions (Lowen, 1982: 47).

The primordial interaction between the individual's vital energy and the external world is realised through the contact of feet and ground; people need to have their feet 'grounded' on the floor in each movement (Lowen, 1982: 82-3). The concept of 'grounding' implies not only a physical contact between feet and ground, but an energetic and qualitative one (Lowen, 1982: 169). Lack of contact with the ground, in psychological terms, means lack of contact with reality (Lowen, 1982: 169).

Human interactions provide a major exchange of individuals' energetic processes, and can be positive or negative. The environment in which children develop can be gratifying if their basic needs are provided and emotional support is available. Children's development can also go along with apprehensions of different kinds - fear of being punished by parents, disappointment, anxiety, loss, feelings of discomfort, agony, and pain. The search for love and pleasure, when followed by privation, frustration or punishment, leads children to develop patterns of defence, which become

part of the personality's structure (Lowen 1982: 118). These patterns of defence are intrinsically associated with tension, as defensiveness and physical tension sustain each other. Defending themselves from painful situations, people get stiff; if there is a promise of pleasure associated with fear of pain, anxiety will be in play (Lowen, 1982: 118). Such tensions obstruct the manifestation of impulses and feelings, reducing the capacity for pleasure, limiting people's contact with the world, and restricting their capacity for self-expression (Lowen 1982: 124). In sum, fear, pain, and anxiety are directly connected with physical tension, and all these elements form a rigid defence system that is converted into stereotyped behaviour, thereby taking part in people's reactions to stimuli.

Alexander's ideas correspond with Lowen's, since he considers tension as a psycho-physical phenomenon. In Dimon's (1999: 9) words:

> ...physical tension is not merely physical, even when we understand this to include physiological and nervous processes; on the contrary, it involves a complex psychology that must be included in any physical description...patterns of bodily tension aren't an expression of behavior; they are part of the patterns of behavior itself.

When considering physical tension, it is thus necessary to take into account not only movement, but also the distribution of tension throughout the entire organism 'during behaviour and during thought' (Barlow 1978:112). With Lowen, Barlow (1959: 330) believes in an intimate connection between muscle tension and anxiety. More importantly, patterns of tension are usually established at an unconscious level (Barlow, 1959: 345; Lowen, 1982: 119-20). Habitual recurrent patterns of worry are based on habitual patterns of muscular tension (Barlow, 1973: 114). Anxiety is in fact a 'worry habit' that, once established, is difficult to reverse; even if the cause of worry is removed, the mental attitude which caused this state may be in action, so that people's learnt responses reactivate their patterns of tension (Alexander, 1923: 139). When the person is not able to reverse tension and return to a balanced resting state after reacting

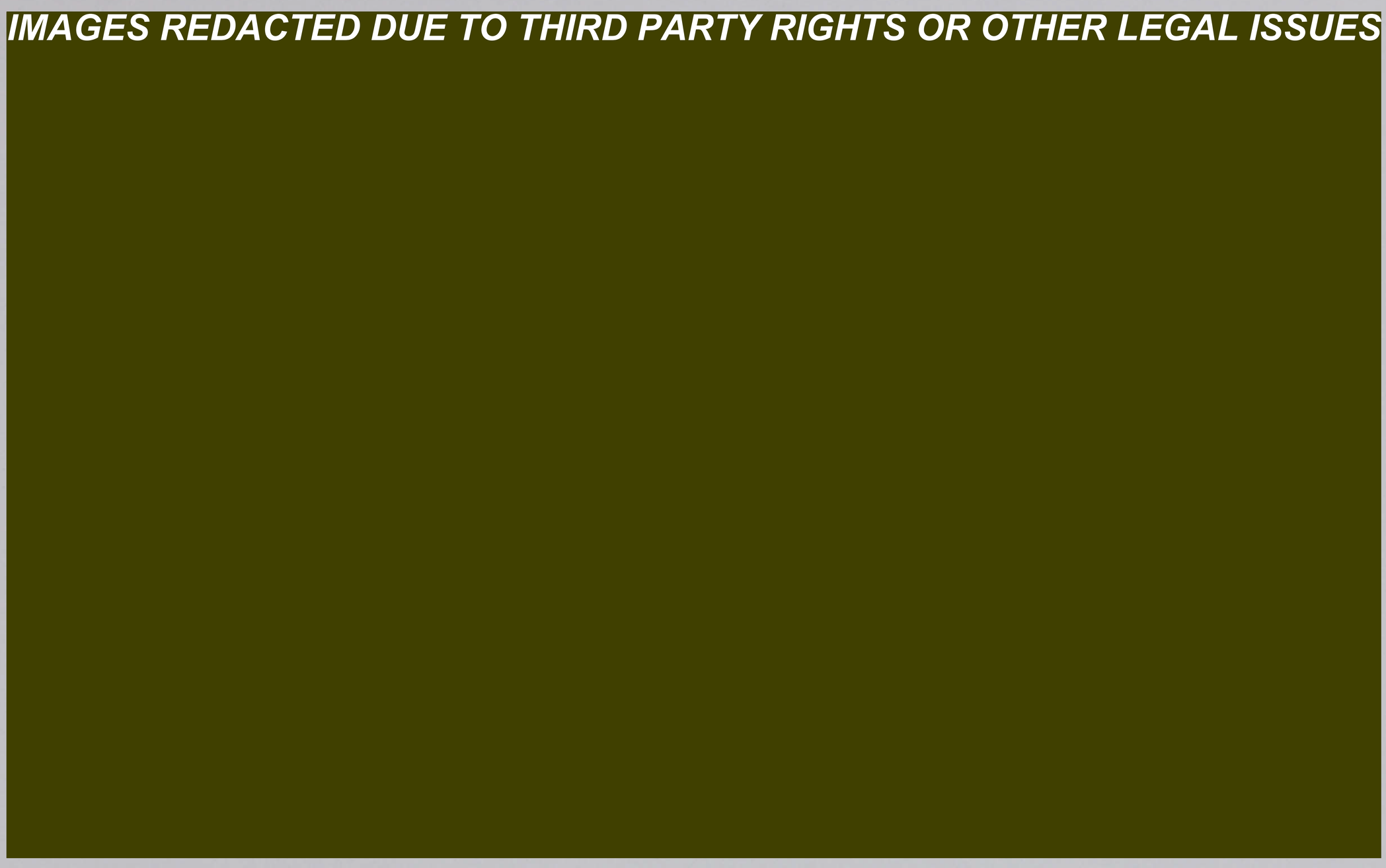
to a given stimulus, a state of stress will possibly emerge (Barlow, 1959: 340). According to Barlow (1959: 341):

> Such an activated pattern will persist, maybe for a short time, until some new situation evokes a different organisation. However, when a "stress" response like this has not been resolved by a return to the resting state, it means that in the future the idea of the situation which provoked it will at once reactivate the muscle tension pattern which was never previously resolved. This is the meaning of "preset" and "anticipatory muscle tension".

Keleman's (1992) *Emotional Anatomy* adds force to these ideas, establishing direct relationships between patterns of defence and the human postural mechanisms. Keleman (1992: 75) considers the role of human feelings and human social interactions in the formation of the upright posture, which is sustained by the vital energy that pulses within the organism and moves in direction to the world. Uprightness exposes the soft and vulnerable parts of the body to the world, amplifying the possibility of interactions and exposing individuals to emotional and physical aggression (Keleman, 1992: 76). Uprightness becomes then an emotional and social event and requires a social and interpersonal network to complete itself, being also influenced by the individual's emotional background (Keleman, 1992: 76). So pleasure, happiness, and confidence, as well as fear, anxiety, tension, and stress will take part in the development of human upright posture. Fear, anxiety, tension, and stress may originate from external threats (social environment, parents, relatives, and friends) or from internal emotional states, if feelings are strong enough to promote imbalances (Keleman, 1992: 76).

Keleman (1992) endorses Lowen's idea of unconscious patterns of defence, classifying these patterns as (1) 'overbound' structures, in which the organism resists continuous or cumulative aggressions, finally incorporating a state of tension and turning into a solid, compact, dense, compressed structure; and (2) 'underbound' structures if, as a response to aggressions and fear, the self gives up, turning into a flabby structure (Keleman,

1992: 77). For the sake of clarity, picture 3.6 offers Keleman's representation of these patterns.



Picture 3.6: (a) Overbound structure. (b) Underbound structure.
Source: Keleman, 1992: 88-89

In Alexander's terms, such patterns of defence become habitual response patterns constituting underlying causes of misuse. Barlow (1961: 3) explains that when postural distortions are perpetuated,

> [They] become a person's norm, and feel so right that a properly balanced use of the body comes to feel unnatural. Momentary attitudes become habitual dispositions, and the body is soon moulded into fixed patterns, which to a large extent determine future performance and future functioning.

If musicians have feelings of fear and insecurity during performance, due to the many reasons mentioned by researchers and by the pedagogues, they will probably respond with anxiety and excessive physical tension to the stimuli of playing. These responses are defences, and may turn into harmful habits of use that make the emergence of

physical disorders likely or enhance the ones that already exist. In Alexander's terms, a 'performance attitude' that involves instinctive and habitual reactions to stimuli such as anxiety and tension is based on an end-gaining mode of attainment, in which the urgency of reaching goals prevails. As mentioned in Chapter 2 (page 99), this mode is the overall tendency in piano pedagogy. If musicians could have a 'preventive attitude towards playing', their practice would be based on a conscious control of the use of themselves, which emphasises a 'means-whereby' mode of attainment. In this case, 'the act performed is of less consequence than the manner of its performance' (Alexander, 1910: 46). This is an important discussion area for the present study, and will be raised again in Chapter 8.

3.2 Musicians' performing problems and their causes

According to Sloboda (1985: 67), musical performance can be taken in the sense as covering the whole range of musical activity (improvising, participation in corporate rituals, dancing to music). Performance can also be understood as an activity in which a performer 'self-consciously enacts music for an audience' (Sloboda, 1985: 67). Overall, the literature on piano pedagogy deals with the second kind of performance, indicating what good piano performance comprises. In the Alexander perspective, musical performance is an activity executed by the psycho-physical self. Alexander (1923: 19) states that:

> [A] psycho-physical activity is simply the response to some stimulus received through the channel of the senses…the nature of the resulting conception and of the response, or psycho-physical reaction, will be determined by the standard of psycho-physical functioning present.

As we have already seen earlier in this chapter, the psycho-physical problems presented by musicians may spoil their musical performances. However, the piano literature, the interviews with the Brazilian pedagogues, and the work of music educators indicate some musical limitations that impoverish musicians' performances, such as lack of

musical understanding, motivation, and involvement with music, lack of familiarity and enculturation with the musical style, lack of technical abilities, good grounding in musicianship and good instruction, lack of practice and parental support, lack of maturation, and lack of focus on the activity. Comments on these limitations will be presented below, followed by an interpretation on these difficulties based on the Alexander principles.

3.2.1 Musicians' limitations that impoverish their performances

In Chapter 1, the pedagogues indicated the factors that are involved in *musical understanding*: awareness of musical narrative, having a previous internal auditory image of the music, fantasy and imagination, attention to tone quality, and aural abilities (listening to one's own performance). To Cançado (2002: 4), Fonseca (2002: 9), and Paes Leme (2002: 4), musicians' inability to listen to their own playing is the main factor that impairs musical understanding, among all those cited above. If musicians do not listen to themselves, they cannot develop a previous conception of the derived sound, adequate to the execution of specific passages. Grossman (2002: 17) reinforces this idea, arguing that singing and internal listening enrich musicians with an inner universe of sound, generating musical conceptions.

Musical understanding also involves the development of sensibility and musicality, and depends on factors that go beyond the frontiers of music learning, such as *motivation* for the music one plays. Hallam (2002: 237) indicates two kinds of musical motivation: intrinsic and extrinsic. Whilst intrinsic motivation is based on innate needs for self-determination and competence (Deci & Ryan in Hallam, 2002: 228), extrinsic motivation occurs as a consequence of external reward (Hallam, 2002: 228). For example, positive social environments, that meet young people's psychological needs, enhance their motivation in relation to specific activities (Eccles *et al.* in Mills and O'Neill, 2002: 286).

Barney and Williams (1989: 45) indicate that intrinsic motivation is one of the typical characteristics of musicians, since many of them show the need for creative self-expression. The piano pedagogues also emphasise the importance of intrinsic motivation (Last, 1960: 136; Fonseca, 2002: 20; Paes Leme, 2002: 10). To Fonseca (2002: 20) the combination of motivation, consciousness, and practice produce a phenomenal result in piano playing. Motivation is also connected with finding pleasure in performing, as some indicate (Enoch, 1974: 54; Whiteside 1961: 107-8; Wieck, 1988: 64).

In addition, musicians are motivated in different ways. Some tend to be 'performance goal-oriented', as they are concerned with obtaining positive judgements of their competence whilst others tend to be 'learning goal-oriented', reflecting the desire to learn and master new skills (Jacobs and Newstead, 2000: 244; Hallam, 2002: 229). However, motivation is not necessarily stable, and may change over time (Jacobs and Newstead, 2000: 243-4).

Involvement with music is another vital factor that contributes to the development of musical understanding. Kaplan (1987: 45) states that, together with the cognitive and motor aspects, the appropriate attitude to deal with musical learning includes an affective component. Piano training disconnected from emotion results in merely mechanical performance (Rosselini, 2002: 3), moving musicians away from response to music (Fonseca, 2002: 6). However, as Sloboda (1996a: 185) states, there are intrinsic structural features in music that are shared by many and allow people to get involved with it (for instance, resolution of tensions and expectations). If musicians react emotionally to these features whilst listening to music, they are probably prepared to use this experience when devising an expressive performance (Sloboda, 1996a: 185).

To illuminate the problem of musical understanding, motivation, and involvement with music, let us look at Green's (1988, 1999) theory of *musical meaning*. 'Inherent musical meanings' arise from the organisation of musical materials in such a way as to promote relationships between them (Green, 1988: 25). 'These are "inherent", in the

sense that they are encapsulated within the musical materials, and they are "meanings", in the sense that they are perceived to have relationships' (Green, 1999: 161). Green's concept of inherent musical meaning corresponds to Sloboda's 'musical structural features' and with 'tangible' aspects of music pointed out by Hazan, quoted in Chapter 1 (page 43). However, Green identifies another aspect of musical meaning, which is not addressed by the pedagogues. As she states,

> Inherent meanings are neither natural, essential nor ahistorical; on the contrary, they are artificial, historical and learnt. Listeners' responses to and understanding of them are dependent on the listeners' competence and subject-position in relation to the style of the music (Green 1999: 162).

So individual musical experience is not autonomous or isolated, but mediated through communal contexts and social history (Green 1988: 27). Musicians' musical understanding does not only depend on the intrinsic relationships among musical elements (inherent meanings), but also upon 'delineated meanings', which emerge as a result of the context in which music is produced, distributed and heard (Green 1988: 28). Delineated and inherent meanings represent thus two aspects of one 'integral meaning' (Green 1988: 67).

The integral meaning to which Green refers is also intrinsically connected with two other phenomena, which are essential in the development of musical experience: *familiarity, and enculturation with the specific musical style*. As Green (1988: 35) suggests, if pupils are unfamiliar with the style, their ability to grasp musical structure is limited. On the other hand, when one hears a piece of unfamiliar music, she or he may try to grasp its meaning through comparisons with familiar music (Hopkins, 1982: 143). The second phenomenon, musical enculturation,

> ...refers to the acquisition of musical skills and knowledge by immersion in the everyday music and musical practices of one's social context. Almost everyone in any social context is musically encultured. It cannot be avoided because we

> cannot shut our ears, and we therefore come into contact with the music that is around us, not only by choice but by default (Green, 2001: 22).

Musical enculturation primarily involves 'unconscious' learning practices, which occur without awareness that learning is occurring (Green, 2001: 60). A spontaneous way of learning music is emphasised and people learn songs even without formal instruction (Herskovits in Kwami 1993: 26). Enculturation also involves an oral-aural process of learning in which listening, watching, imitating, and playing by ear take place (Akinpelu in Kwami 1993: 27; Campbell 1991: 103; Green, 2001: 177), as well as identification with the musical style, enjoyment and commitment (Green, 2001: 177). Musical enculturation is typical of many non-western and non-literate societies; 'through the process of enculturation, a set of experiences within the culture is shared by every member' (Campbell 1991: 80). Enculturation is also central to the informal practices of learning adopted by popular musicians (Green, 2001: 23-4).

For some, musical understanding is not a problem, but they may have difficulties in expressing their musicality as a result of not having *appropriate technical skills* and *good grounding in musicianship*. Even if musicians do not all have the same technique, as each one has a personal history, pre-disposition, and bodily conditions (Grossman, 2002: 6-7), they can consider the development of technical skills in the light of the principles offered by the pedagogues in Chapter 1: flexibility, balanced posture and sitting position, and the utilisation of the body as a whole in performance. The need for good grounding in musicianship was also emphasised by the pedagogues quoted in Chapter 1 (page 33), especially by Gonçalves, who offered a list of 'functional abilities in the use of the keyboard'.

The development of musical understanding, technical skills, and good grounding in musicianship certainly demand *practice and good musical instruction,* as has already been discussed in Chapter 1 (page 44). Additionally, *parental support* plays an

important role in generating music students' dedication to music (Sloboda, 1996: 182). High achieving performers usually had an encouraging home musical environment, with parents who enjoyed music and supported their musical activities as well as teachers who were good performers, friendly, and involved with pupils' musical development (Sloboda, 1996a: 180-1).

The pedagogues call attention to the importance of *musical and personal maturation* for instrumental learning and performing (Kaplan, 1987: 54; Cançado, 2002: 7-8; Menegale, 2002: 17; Fonseca, 2002: 16; Rosselini, 2002: 6). Pupils' maturation depends on many factors, such as age, previous musical experience, physical structure, and psychological maturation (Kaplan, 1987: 54). These factors are in play in performance, because, as Fonseca (2002: 16) states, 'people do not play the piano with their hands, but with their lives. Playing is an expression of a person's life in association with musical information, experience, ideas and conceptions'. Besides, musical maturation happens progressively and some musical notions can be better discovered through non-musical experiences (Menegale, 2002: 17-26). Thus lack of musical and personal maturation may be responsible for musicians' performing difficulties. Or perhaps, as Kaplan (1987: 52) claims, time consumed by practice may be useless if the level of difficulty presented by the musical pieces is much beyond the pupil's level of maturation.

3.2.2 An Alexander perspective on musicians' musical limitations

Lack of musical understanding, technical abilities, good grounding in musicianship, practice, good instruction, and maturation were pointed out as factors that impoverish musical learning and performing. These factors can be related to other ones pointed out by Alexander (1923: 78):

> Activities of life…are influenced by and associated with our incorrect conceptions, our imperfect sensory appreciation, our unduly excited fear reflexes and uncontrolled emotions and prejudices, and our imperfectly adjusted mechanism.

Poor musical conceptions and understanding, poor listening abilities, and poor grounding in musicianship can be accentuated or even caused by musicians' *lack of self-awareness*, and a *lack of connection between their psycho-physical self and music learning and playing.* Alexander (1910: 80) argues that:

> The standard of functioning of the human fingers and hands…depends entirely on the degree of kinaesthetic development of the arm, torso and joints; in fact on the standard of the co-ordination of the whole organism (Alexander, 1910: 80).

And more:

> …the process of conception, like all other forms of psycho-physical activity, is a process the course of which is determined by our psycho-physical condition at the time when the particular stimulus is received (Alexander 1923: 19).

To one who wants to play musically well, music is not an external object to be manipulated, but something that emerges from the performers' intentions and gestures. If musicians' organism is fragmented, and no coherent relationships are established between the mental, psychological, and physical aspects during performance, they may express such a fragmentation in their playing, producing mechanical actions and communicating lack of involvement with the music. Whiteside (1951: 25) states that in a mechanical, note-by-note performance, the musical idea as a whole cannot be expressed, and unmusical performances result; the music becomes 'fragmentary, tense, and distorted'. As 'technique is but applied use of the self' (Alcantara, 1997: 195), instrumental technical deficiencies may also result from *incorrect psycho-physical conceptions*, in which the gestures applied are not coherent with the intended musical

result. Fear reflexes and excessive tension may compound the lack of understanding of how to use the body in the execution of specific passages.

In musical practising, musicians should avoid trial and error attempts, which are based in unconscious repetition. 'Trying is only emphasizing the thing we know already' (Alexander, 1995: 207). Alexander writes:

> Every unsuccessful "try" not only reinforces the pupil's old wrong psycho-physical habits associated with this conception of a particular act, but involves at the same time new emotional experiences of discouragement, worry, fear, and anxiety, so that the wrong experiences and the unduly excited reflex process involved in these experiences become one in the pupils' recognition'. (Alexander, 1923: 209).

So far, the possible psycho-physical and musical difficulties of musicians have been presented. Drawing on the Alexander principles and on other theories, a framework was developed to explain these difficulties. Many musicians consider that the Alexander Technique can help them to overcome many of these problems, or at least to reduce their harmful effects on instrumental performance and other activities of daily life, as will be shown next.

3.3 The effects of the Alexander Technique on musicians' playing

Since the 1960s, the Alexander Technique has been taught at major music schools in the UK (Langford, 2003: 21; Williamson, 2003: 1). Today the Technique has a place in all major conservatoires in the UK and many other countries (Williamson, 2003: 1). Musicians have reported the benefits of the Alexander Technique to their lives and profession, whilst researchers have been investigating the topic. The primary purpose of this section is to present such reports and findings, followed by some temporary negative effects of the Alexander Technique on practitioners.

3.3.1 The Alexander Technique and instrumental playing

Jones (1968: 14) discusses the application of the Alexander Technique to the work of musicians, who reported increased self-awareness after Alexander lessons, which was reflected in their music making (Jones, 1968: 14). He also found an increase in singing voice resonance, better breath control, and ease in singing (Jones, 1972). A jazz musician, a pupil of Jones, offers an account of the Alexander lessons' benefits to his work:

> The major problem that one has when starting out on an instrument is the inability to monitor your own performance. Again the invaluable nature of the Alexander Technique as applied to music instruction is apparent. The more one becomes aware of physical counterparts to seemingly unrelated phenomena the more objective one can be in viewing one's own workings, due to the objective sensory distance that prevents one from interfering with the task (in Jones, 1973: 356).

Stevens (1995: 44) showed the effectiveness of the Technique in reducing orchestral musicians' anxiety over performance, compared to other methods of reducing anxiety. In a study by Valentine *et al.* (1995), music students showed improvement in technical and musical quality, attitude towards performance, self-rated anxiety and concentration, stress, and the mean heart rate, after having Alexander lessons. Musicians reported feeling an extra dose of energy to deal with daily situations and improvement in breathing (Stevens, 1995: 46-7) as well as increased awareness and ability to release excessive tension (Valentine *et al.*, 1995: 139).

With reference to guitarists, Court and Biggs (in Clinton)[1] offer reports on the effects of the Technique on their playing. After having Alexander lessons, their health, body-

[1] The year of the report offered by Clinton is not indicated in the document.

awareness, and guitar playing improved. Court (in Clinton: 24) experienced changes in her body, her sitting position, decreased levels of bodily tension, and improvement in self-awareness, control, and teaching abilities. She also attributes to the Technique improvements in public performances and better control over her feeling of fear (Court in Clinton, 25). Biggs (in Clinton: 25-6) reports similar improvements and adds a comment on practising:

> In my practice at one time I'd be quite happy to play for an hour and a half without a break. And I'd think nothing of practising for seven or eight hours a day. Now I play for no longer than forty minutes at a time, and my daily practice has been cut down to three or four hours...And because the time is spent more efficiently I'm getting as much done if not more, than I was during my eight-hour-a-day stints (Biggs in Clinton: 26).

According to Collins (1978: 2) the Alexander Technique helps violinists to avoid aches and pains, achieving bodily lightness; to free muscles in the neck and arms, dealing with the total patterns of balance and increase in overall coordination, focussing on the whole musculature and nervous system; to economise effort and develop strength and control, eliminating conflict between simultaneous movements; to avoid obsessive preoccupation with certain details during performance; to stop faulty habits, thus preventing 'getting stuck' because of particular technical problems; to reduce strains associated with specific violin problems; to stretch hands and arms without fixation or distress; to conceive the tone quality before producing, which helps violinists to produce better quality. In the hands of the violin teacher, the Technique becomes a method by which the pupils' difficulties can be observed accurately, analysed and remedied (Collins, 1978: 2-3).

Klijzing (2002: 3) suffers from a spastic paralysis due to brain damage at birth, which interfered with her cello playing. Daily and intense cello practising reinforced her tension in the legs and back, with consequent backaches. After having Alexander lessons, and subsequently taking an Alexander training course, Klijzing (2002: 4)

became aware of other physical problems: her foot had a tendency to withdraw from the floor, and her left hand had a tendency to withdraw from the strings. Gradually, her overall condition improved and she became more able to deal with the spasms (Klijzing, 2002: 4). Klijzing (2002: 7) writes:

> I started to experience a continuous interaction between gravity and my own expansion and upward direction as a base from which I make contact with others and with the rest of the world. [I experienced a new] psycho-physical reality, in which the amount of poise determines skill, communication, resilience, level of energy, freedom of choice, responsibility and growth.

In her cello playing, as well as in all other activities, Klijzing (2002: 8) kept working 'through the spine and from the primary control instead of the extremities only'.

Dennis (1983: 21) reveals the Alexander Technique's effects on clarinet playing: posture, breathing and instrumental practice are the main aspects that changed in his own playing. Dennis (1983: 21) realised the he was 'the instrument that played the instrument', and that 'working on himself', in Alexander terms, helped him to improve his technical training in significant ways.

The application of the Alexander Technique to flute playing is discussed by Bosh and Hinch (1999). An advanced amateur flautist who suffered from lower back pain from time to time, fatigue after playing, and poor breathing and sound-support, improved sound quality after having Alexander lessons, keeping the sound 'full and resonant'; the backaches disappeared after some time and she was distributing her body energy more economically (Bosh and Hinch, 1999:247-8). An eleven-old child used to lift the flute more than necessary due to the pulling and raising of the left shoulder and other postural faults. She complained of both fatigue and cramping in her left shoulderblade. The Alexander lessons helped this young student to become aware of her postural

situation, improving her posture and breathing, and stopping over-stretching (Bosh and Hinch, 1999:250-1).

Singing teachers investigated the effects of the Alexander Technique on singers (Lewis, 1980; Lloyds, 1986, Head, 1996). Lewis (1980) examined to what extent singers are aware of body tension's interference with resonant singing tone. Lewis (1980: 108) found that the more extensive the Alexander experience is, the more likely the singing teachers are to realise the need for changing counterproductive singing habits. As for her own singing, the Alexander lessons provided more resonant speech, freer singing, and insights for solving vocal problems; feeling of lightness and expansiveness, and awareness of patterns of tension (Lewis, 1980: 2-3, 75). A singing student said that his speaking voice felt free and smooth, and the neck, lips, tongue, and jaw were more flexible (Lewis, 1980: 129). Other students recognised that physical tensions, as well as psychological and emotional factors (e.g. nervousness) interfered with the production of resonant singing tone (Lewis, 1980: 132).

Lloyd (1986) examined her own conditions as a singer before and after having Alexander lessons. She experienced emotional release (dealing with anger in a better way and inhibiting nervousness during performance); reduction in the levels of bodily tension; effortless breathing; less strain in the higher register and improved vocal tone; better contact of feet with the floor, allowing weight to rest on the feet, and less tiredness during rehearsal (Lloyd, 1986) She also reports similar improvements in her pupils, and others: better control of states of anxiety and fear, with a consequent effect on self-confidence; better use of time; changes in the vocal timbre and improvement in the ability of achieving high notes; and overall postural change. Additionally, the Alexander Technique affected her ordinary daily movements, bringing a more positive attitude towards many aspects of life, and increasing her ability to change harmful singing habits (Lloyd, 1986: 125). Head's (1986: 13-15-26-28-42) comments on the improvements in general use and functioning provided by the Technique largely coincide with the ones presented above. Additionally, she became able to sing with ease without warming up (Head, 1986: 13).

3.3.2 The Alexander Technique and piano playing

Armstrong (1975) provides piano pupils' reports on the effects of Alexander lessons on their performance. They used words such as 'looser', 'taller', 'lighter', 'relaxed', and 'freer' to define their experiences with the Technique (Armstrong, 1975: 39). They became calmer, improving their control of performance anxiety, and other aspects of their lives were also affected in positive ways (Armstrong, 1975: 49).

In the same vein, Naylor (1977: 11) states that the anxiety to overcome technical difficulties and performance anxiety are connected with pianists' tendency to focus on the end-product. The Alexander Technique helps pianists to focus their attention on the 'means-whereby' their goals in piano playing should be achieved, helping them to overcome anxiety (Naylor, 1977: 11). Additionally, he reports positive effects of the Technique on his own patterns of tension and pain when playing the piano (Naylor, 1977: 11).

As a pianist and Alexander teacher, Ben-Or has been working towards the integration of the Alexander principles with piano playing for more than thirty years. Ben-Or (1991: 9) herself became able to dissolve old habits of playing.; instead of pursuing the acquisition of strong fingers, the improvements of self-observation, a state of non-doing, and the integrity of the psycho-physical self provide the skills for playing. Ben-Or (1988: 9) argues that both the Alexander Technique and the preparation for music-making require clarity of perception and conscious attention, qualities which are essential in the development of a creative piano technique (Ben-Or, 1988: 9). When a conscious musical preparation is employed, musicians' attention to inner listening connected with the ability of creating a musical concept is enhanced, as well as the execution of this conception through the simplest means (Ben-Or, 1988: 13). Additionally, conscious musical preparation which preserves the integrity of the

psycho-physical self leads to better control of physical strain and performance anxiety. (Ben-Or, 1998: 29-30). So practising strategies, which lead to a clear and fluent performance, need to include the awareness of the total patterns of use (Ben-Or, 1995: 93).

Musicians' encounters with the Alexander Technique can lead to unexpected revelations concerning the sensation of ease in playing, since they become able to change their habitual patterns of thinking about music (Ben-Or, 1988: 7-8).

> The approach to the music score will need a more questioning mind. A new understanding of its contents will lead the musician to employ new, consciously chosen means for playing, often very different from those he has hitherto mechanically acquired...Alexander's instruction for inhibition and conscious direction can not be sufficiently effective unless the entire process of preparation of a work of music for performance is re-examined (Ben-Or, 1988: 8).

Two other aspects of piano playing are discussed by Ben-Or: speed and volume of sound. When pianists deal with passages that require great speed, they habitually tend to consider that these passages are difficult (Ben-Or, 1988: 9). Taking into account the Alexander perspective, instead of taking speed as a challenge that requires mechanical practising, clear and fluent thinking will be in play before involving the body in the production of the corresponding sounds (Ben-Or, 1988: 10). 'It is the mind that has to absorb and organise the material for speed. The mental activity propels the body. And whereas our body has limitations such as size of hands, length of fingers and so on, the mind has no such restrictions' (Ben-Or, 1988: 10). The Technique also helps people to become aware of the exaggeration of effort unnecessarily involved in producing large volumes of sound (Ben-Or, 1988: 11). It is easy to see pianists tightening their necks, pulling the chest down, fixing hands and fingers in order to obtain such sonorities (Ben-Or, 1988: 12). From making less effort, players are able to obtain richer sonorities in loud and soft playing (Ben-Or, 1988: 12).

3.3.3 Potential negative effects of the Alexander Technique

The Alexander Technique may bring about temporary negative effects. Early or intensive Alexander lessons may cause temporary pain (Garlick, 1933: 13), fatigue (Williams, Barlow, Walker, and Spawforth in Taylor, 2000: 20, 70, 97, 104; Lloyd, 1986: 49-66), and a reduction in the energy available to approach activities such as singing (Murdock and Heirich in Head, 1986: 33)

Barlow reports the occurrence of boredom (in Taylor, 2000: 67), and William (1982: 3-8) cried during Alexander lessons. Lloyd (1986: 109) reports on a pupil's dizziness whilst lying down on the table. Others experience confusion and disorientation after lessons (Lloyd, 1986: 66; Lewis, 1980: 83, Head, 1986: 40; Westfeldt, 1986: 29; Head, 1996: 40; Klijzing, 2002: 7). Perhaps this happens because Alexander practitioners break psychological barriers, releasing hidden suffering or strong tension, which was Lloyd's case (1986: 58). They also may temporarily lose their familiar feeling and image of themselves, moving from the known to the unknown (Klijzing, 2002: 7).

Mistakenly, Alexander practitioners may 'try to do a right posture', loosing spontaneity. William (1982: 7) provides an example of this problem:

> Occasionally F.M. [Alexander] would come into class and look at us all sitting round and he'd say "Just look at you all sitting round trying to be right". You still do see students and teachers doing this sort of thing, sitting up like rigid dummies. You get an idea of what you should be doing to lengthen and sit there 'doing' it. It gives the Technique a bad name unfortunately. They get labelled those 'fixed' Alexander people!'

Barlow (1973: 161) points out the dangers brought about by excessive inhibition, which may lead practitioners to a state of passivity and unresponsiveness (Barlow, 1973: 161). 'Such "sensory deprivation", which may come from over-zealous inhibition, must clearly be used with care...the period of inhibition is seen merely as a stage of preparatory choice in which the eventual muscular use can be decided on, a stage which leads on to activity or to a state of freedom while at rest' (Barlow, 1973: 161). In addition, inhibition may lead to a certain amount of dissatisfaction, anxiety, and even depression (Barlow, 1973: 172). Some people may feel sleepy and, if so, they need to be encouraged into action (Carrington, 1994: 135). My work (Santiago, 2001: 41) provides an example of excessive inhibition. A nine-year-old piano pupil was required to inhibit her movements, thinking carefully of the means which she would adopt to obtain the best musical results. The child had an amazing capacity for inhibition, taking it so seriously that it turned into some kind of fixation; thus it was necessary to persuade her to move on with the activity.

Whittaker (in Taylor, 2000: 144) also reports the danger of inhibiting without directing, describing her experience whilst receiving hands from an Alexander teacher:

> She [the Alexander teacher] was standing at my side a long time. Nothing happened. Then, she put one hand here, one hand there...Nothing, nothing, absolutely nothing. And I waited, and that was more or less the nature of the whole thing. It was nothing. It was just "putting hands on". But there's more to it than that. If F. M. [Alexander] put his hands on you, you got a direction straight away.

Overall, the musicians' informal reports on the effects of the Alexander Technique as well as research on the topic have shown that the Alexander Technique has had positive effects on the work of those musicians in the three aspects discussed throughout this chapter - physical activities, attitudes, and performance. However, some practitioners also experienced temporary negative effects.

Neither musicians nor researchers establish clear connections between the three aspects, or provide a qualitative and systematised process of observation, which may show in detail to what extent the Technique influences musical performance. More importantly, they do not show the potential negative effects of the Technique in performance, and do not connect their findings with a theoretical framework that may explain them. In addition, they do not connect their findings with instrumental pedagogy, encouraging instrumental teachers to further reflect on musicians' problems. Finally, research on instrumental playing does not give to the Technique the educational status that it entails and deserves, and research on piano playing that includes children, and assumes such a status, is probably non-existent. For all these reasons, the present study intends to investigate to what extent the Technique may influence the playing of young piano pupils through detailed observation by experts in different settings. To systematise and unify the observers' voices, criteria for observation that include the three aspects cited above will be established in the next section.

3.4 Criteria for observing and assessing piano pupils' changes

As well as professional musicians, young piano pupils may have physical, attitudinal, and performing difficulties and facilities. These three aspects have guided the formulation of comprehensive criteria of observation in this study, allowing the research to observe and assess the possible changes that piano pupils may experience throughout the learning process and in the context of performance. These three aspects include the observation of the entire psycho-physical self, taking into consideration the factors that concern Alexander teachers and piano pedagogues.

Musicians claimed that the Alexander Technique helped them to improve themselves in each of these aspects: providing release of excessive tension, improvement in posture, better control and monitoring of performance, improvement in calmness, attentiveness, and self-confidence. They also indicated that the Technique helped them to improve the overall quality of musical performance, tone quality, control of rhythm, and dynamics. As this study investigates the effects of the Alexander Technique on young piano

pupils' performances, it benefits from adopting sub-criteria such as the ones cited above, as they fully embrace the factors presented in this chapter, and may provide detailed observation of pupils' musical development. Such criteria enable the study to confirm or dismiss the musicians' claims for the effects of the Technique on their playing, to establish relationships among the three aspects under observation, and to establish links between the Technique and piano teaching and learning.

It is important, however, to look at the comments provided by researchers in music education with regard to performance assessment. Two aspects of assessment must be taken into account: the modes of assessment, and the categories of assessors. Mills (1991) identifies two modes of assessment, segmented and holistic. With segmented criteria, marks are awarded under a number of subheadings (rhythm, intonation, tone quality and technique), whilst holistic assessments award a single mark for performance. She argues that holistic assessments are more reliable than segmented assessments, as assessing the separate components of a performance may create judgements that exclude much of the performing materials, and judges' perceptions of specific performance elements may differ (Mills, 1991: 176). These comments show that music educators' concern is to adopt procedures that provide a means of assessing musical performance musically (Swanwick, 1997; Mills, 1991). In this respect, Mills (1991: 175) states that moving from the whole performance to its components would provide a clear idea of the quality of the performance being heard.

Concerning the categories of assessors, the literature on the topic shows that musical assessment can be done not only by experts in the field (e.g. judges, professional musicians), but also by teachers, peer-group members, and pupils themselves (self-assessment). Some educators call attention to the importance of self-assessment. For instance, Elliot (1987: 157) highlights the importance of pupils' awareness of their strengths and weaknesses, and Mills and O'Neill (2002: 285) show that pupils' views can be used to enhance the assessments made by others. Daniel (2001) indicates other advantages of self-assessment: it promotes pupils' critical reflection on their learning process and performing abilities, encouraging them to take responsibility for their own learning (Daniel, 2001: 216-218). His study also shows, however, that self-assessment

may 'bring down self-esteem' and make pupils too demanding on themselves (Daniel, 2002: 224).

Considering the comments above, the present study seems incoherent, since it adopts segmented criteria to assess the effects of the Alexander Technique on piano pupils' conditions, a technique which is considered to encourage *holistic* psycho-physical changes. If the study intends to reinforce the educational status of piano teaching, pointing to a more holistic way of dealing with pupils' difficulties, how can it opt for a segmented mode of assessment? Firstly, the pupils' performances will be examined in a segmented way, so that changes in different components of performance, as well as in each component of the physical and attitudinal aspects, can be revealed. In so doing, this study may be able to assess whether the changes that occurred in each component are due to Alexander lessons or not. Secondly, the study adopted different categories of observers (Alexander teachers, piano teachers, and doctors) who used the criteria only as guidelines for their observations. They were free to move from the whole performance to its components, as Mills recommended above, or they could focus their comments on specific aspects, according to their expertise, concerns, and motivations. It must be emphasised that the comments provided by these different observers were converted into a holistic assessment of the pupils' situation in the process of data analysis, because at that stage, cause-effect relationships were established among the three aspects under scrutiny (physical, attitudinal, and performing aspects).

Summary and conclusion

The purpose of this chapter was to connect piano pedagogy and the Alexander Technique. Primarily, a linkage can be established between the Alexander principles and the common pedagogical principles drawn from the piano pedagogy literature, as both advocate the same ideal: a balanced and well co-ordinated organism that performs activities with minimum effort and great freedom and release. However, a most important bridge between the fields can be constructed if one looks at the disorders, problems, and difficulties presented by musicians and music students in the physical,

attitudinal and performing aspects. A number of different voices have been combined to indicate these problems and their potential causes. The chapter also reported the positive and potential negative effects of the Alexander Technique on musicians' work and lives. At the end, the criteria and sub-criteria for observations drawn from the discussion were presented, and are to be adopted in the present study to observe the piano pupils' changes in the three aspects under investigation.

The chapter claims that, whilst the majority of piano pedagogues and researchers tend to emphasise 'the problem', that is, what happens to musicians that may impair their activity, the Alexander Technique addresses the musicians' psycho-physical self as a point of departure, indicating that their problems may be associated with the cultivation of harmful habits of use, wrong attitudes towards performance, lack of self-awareness, and an 'end-gaining' mode of achieving performing goals.

Chapter 4

The Empirical Research

Introduction

This chapter deals with the empirical research. In the first section, the research purpose, nature, and question are presented. The second section defines and justifies the methods employed to collect data, and presents the research design. A summary of the fieldwork is offered in the third section and the fourth section introduces the methods and steps used for data analysis.

4.1 The purpose and nature of the research

According to Alexander (1941: 12), the way we use ourselves affects our functioning, for good or ill. In the previous chapter, musicians and researchers reinforced Alexander's statement, as they affirmed that the Technique helped practitioners to prevent their bad functioning and, to some extent, improve their musical performances. The purpose of this research is therefore to examine the effects of the Alexander Technique on young piano pupils' performances, and observe whether the Technique can help them to solve their performing difficulties and improve their overall learning process. Besides, as stated previously, the ultimate research purpose is to call piano teachers' attention to pupils' difficulties, and to reflect on the philosophical implications that the Alexander principles may have for piano teaching.

This research demands an investigation in which the potential effects of the Alexander Technique on young piano pupils can be observed in practice. For this reason, the research scenario is established by an experimental strategy, which allows the observation of the physical, attitudinal, and performing changes that may happen to a small group of piano pupils. Experimental research which deals with physiological and quantitative measures of the effect of the Alexander Technique on musicians already exists (e.g. Jones, 1998; Stevens, 1995; Valentine *et al.*, 1995), but it does not reflect an educational concern. The quantitative methods emphasised in such research may not take into consideration the meanings and purposes that the human actors attach to their activities within the research context, and other variables that emerge during the research process (Guba & Lincoln, 1998: 197-8). 'Quantitative normative methodology is thus privileged over the insights of creative and divergent thinkers' (Guba & Lincoln, 1998: 198).

As Robson (2002: 95) states, there is nothing intrinsic to experimental designs that discards qualitative methods or data. Thus the present study is mainly conducted within a qualitative framework, which opposes the quantitative experimental paradigm. It embraces a triangulation of methods of data collection, focussing on the contributions of many observers (piano teachers, Alexander Technique teachers and doctors) as well as the piano pupils' own perceptions concerning their changes during the research process. The interplay among the observers' voices helps the research to construct 'well-grounded, rich descriptions and explanations of processes in identifiable local contexts' (Huberman & Miles 1994: 1). A brief quantitative analysis of some specific aspects of the data analysis process is however offered at the end; this aims at clarifying and reinforcing the findings provided by the qualitative data analysis.

The danger of the researcher's bias, the difficulties with reliability, validity and generalisation of findings, which are disadvantages of qualitative research (Huberman & Miles 1994: 12), can perhaps be overcome by the constant interaction among the voices of the many observers and the opposing paradigms that this research involves. As an Alexander and piano teacher, who assumes the researcher's role, I am

challenged to question my own convictions, perceptions, and ideological interpretations, avoiding simple 'yes' or 'no' answers, and seeking a deep understanding of the phenomena under study; this search made me consider this study as a 'continuous, interactive enterprise' (Huberman & Miles 1994: 12).

4. 2 Methods of data collection and the research design

In this research, two empirical studies were conducted to investigate the effects of the Alexander technique on young piano pupils' performances: the pilot study (see Appendix C) and the main study. Both embraced triangulation of data collection methods. 'Triangulation' refers to the use of multiple methods to approach a problem (Cohen and Manion, 1994: 233, 235: Arksey and Knight, 1999: 21; Robson, 2002: 371). Denzin (in Cohen and Manion, 1994: 235; in Arksey and Knight, 1999: 23) indicates four types of triangulation available to enhance the quality of research investigations: methodological, data, investigator, and theoretical. The present study adopts two of these types, methodological and investigator, for the reasons presented below.

Methodological triangulation refers to the use of the same methods in different occasions, or diverse methods in the same study (Denzin in Cohen and Manion, 1994: 235; Arksey and Knight, 1999: 23). This study makes use of the second of these, embracing diverse strategies for observing the same phenomenon. Methodological triangulation helps researchers to obtain different sets of data and to explain in more detail 'the richness and complexity of human behaviour' (Cohen and Manion, 1994: 223). It also reduces the limitations of the methods adopted by researchers, since different methods of data collection can complement each other.

This research also uses investigator triangulation, which means that multiple observers participate in the research setting (Denzin in Cohen and Manion, 1994: 235; Arksey and Knight, 1999: 23). This kind of triangulation helps researchers to check

their own accounts against other independent accounts. If the observers provide congruent or minimally divergent viewpoints, this removes 'the potential bias that comes from a single person and ensures a greater reliability in observation' (Denzin, 1970: 239). However, significant mismatch of observers' opinions may also occur (Denzin, 1970: 239). This indicates possible sources of biased measurement, and leads researchers to critically review their own observations. Dissonant opinions among observers can also be illuminating and revealing (Barbour and Kitzinger 1999: 6), bringing together a range of views of the same problem, which may provide alternative explanations, enhance confidence and interpretability, and strengthen the completeness of the research findings, contributing to a in-depth understanding and a comprehensive account of the topic under investigation (Arksey and Knight, 1999: 22-25).

4.2.1 The methods of data collection

The empirical study employed the following resources for methodological triangulation: (1) an experimental strategy; (2) audiovisual materials, which included videos of piano pupils' performances and photographs of these; (3) group discussions, with different settings for observers, who saw the pupils' performances on video; (4) written feedback through short questionnaires designed for the piano pupils; (5) the completion of an observation form designed for the piano and Alexander teachers and the researcher; and (6) semi-structured interviews conducted with eight Brazilian piano pedagogues.

The investigator triangulation involved written observations, perceptions, and comments provided by those who directly participated in the research process: the piano pupils and teachers, the Alexander teacher, and the researcher. They will be referred to as 'participant observers', since pupils and teachers were members of the group under examination, and active actors within the scenario. The researcher intended to be a simple observer, but, as Robson (2002: 319) makes clear, 'it is questionable whether anyone who is known to be a researcher can be said not to take

part in the activity'. Additionally, oral observations were provided by groups of what will be referred to as 'independent observers', who were completely blind to the research methods and to the pupils' conditions. The independent observers had different but complementary areas of expertise, emphasizing different aspects of pupils' conditions in their comments.

4.2.1.1 Experimental strategy

The choice to carry out an experiment indicates a concern for the effects that a specific phenomenon may have on something else (Robson, 2002: 110). Experimental designs are suitable for researchers who need to reflect on changing processes (Denzin 1970: 27); they help researchers to answer how, and why questions, as experimental designs guide researchers into exploratory and explanatory investigations (Yin 1994: 6). For these reasons, an experimental approach was adopted for this study, involving: (1) random allocation of the pupils in matched pairs, to experimental and control groups; (2) the use of two independent variables (the Alexander Technique for the experimental group and sessions on mythology for the control group); and the use of dependent variables defined by the criteria of observation (physical, attitudinal, and performing changes); (3) the establishment of a baseline period, culminating in the recording of pre-tests; and (4) the establishment of an experimental period, culminating in the recording of post-tests.

If it is possible to find pairs of individuals who are closely matched, this specific design helps researchers to establish cause-effect relationships, reduces the difference between individuals, and facilitates the observation of the treatments effects (Orr, 1999: 7; Robson 2002: 125). However, to select a good matching variable is a difficult task and this design also introduces difficulties in data interpretation (Robson 2002: 125). As the intention of this study is not to compare pupils and their musical performances, the specific performing abilities or difficulties of each pupil were not used as matching criteria, but their overall musical conditions. The pairs of piano pupils were matched by: (1) age: between nine and eleven in the pilot study; between

ten and fourteen in the main study; (2) level of musical and piano instruction: the pupils belonged to the same 'musicalisation'[1] group, meaning they were doing similar ear training; (3) social background: all pupils involved in the research were considered to be middle class citizens, having similar home environments; and (4) level of repertoire.

As stated previously, each pair of pupils was randomly allocated to experimental and control conditions. Introductory lessons on the Alexander Technique were given to the experimental group, making the Alexander Technique an independent variable. Initially, the control group was not expected to receive any specific treatment, but given the context of the music school in which the experiment was conducted it was necessary to introduce an alternative treatment, another independent variable, which will be described later. The possible dependent variables were identified previously, given that the literature review provided grounds for developing criteria of observation based on the piano pedagogues concerns, the potential problems of musicians, as well as the potential effects of the Alexander Technique on the work of musicians. Details of the criteria will be offered latter.

In order to allow the observers to compare the changes which occurred in the individuals of the two groups, baseline and experimental periods were established, and pre-and post-tests were recorded. Campbell and Stanley (1963: 13) provide a classic notation for such design; this is reproduced below. It is important to re-emphasise that in the present study, it was necessary to introduce an independent variable to group B (control), which is not included in the figure below.

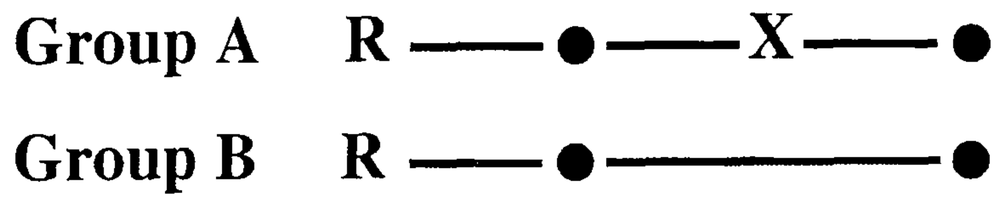


Figure 4.1: Pre-test and pos-test design. **Group A** is the experimental group and **Group B** is the control group. **R** represents random assignment of pupils to groups. **X** represents the independent variable (the Alexander Technique). ● represents the video-recording of the pre- and post-tests.

[1] 'Musicalisation' refers to ear training in Brazilian music schools.

4.2.1.2 Audiovisual materials

The production of audiovisual materials is an unobtrusive method of collecting data, which provides 'an opportunity for participants to directly share their reality', and has the power of capturing attention visually (Creswell, 2003: 187). This research could benefit from producing such materials, as all the piano lessons and some of the Alexander lessons were video-recorded. The researcher could see these videos integrally, but other observers of this thesis saw only the pupils' pre-and post-tests performances, which are available to readers in the two CD Roms included in this work. The pupils' photographs were also taken in the pre-and post-tests and will be presented in Chapter 5. Nonetheless, as Creswell (2003: 187) states, audiovisual data may be difficult to interpret, and the presence of a video camera may be disruptive, affecting responses. These fragilities became evident in this study, as will be seen later.

4.2.1.3 Interviews

In order to obtain an original contribution from current Brazilian piano pedagogues, the researcher conducted semi-structured interviews with eight significant Brazilian piano pedagogues. Six of them work in Belo Horizonte. The other two teach their piano pupils in Rio de Janeiro. The questions asked to the Brazilian pedagogues were inspired by the literature of piano pedagogy, focussing on topics discussed in Chapter 1 (such as definitions of piano technique, the common piano pedagogical principles, piano practice, and piano teachers' and pupils' roles). Although semi-structured, as Kvale (1996: 19) states, qualitative interviewing is based on conversation. These conversations are reliable sources because the interviewees were invited to talk at length about the topics raised by the questions (Arksey and Knight, 1999: 86), with little interference by the researcher. They proved to be exceptionally valuable, as they clarified many of the obscure aspects of the literature, reinforced the researcher's own ideas on the topic, and provided an insightful view of the pedagogical problems confronted by the piano teachers who participated in the research, also enriching and

facilitating the process of data analysis. Many comments by the Brazilian pedagogues were offered in Chapters 1 and 3.

4.2.3.4 Questionnaires

It not possible to determine whether or not anyone who completes a questionnaire is giving real attention and sincere answers to the questions (Robson 2002: 233). However, because questionnaires do not require the direct intervention of an interviewer, people can be left alone, which may encourage confidences that would not be provided otherwise (Robson 2002: 238). For this reason, instead of being interviewed by the researcher all the piano pupils gave accounts of their experiences during the research process by completing two short questionnaires. The questionnaires were developed according to the following guidelines provided by Robson (2002: 245-6), and Branner and Kanbouri (lectures, 2001): (1) a definition of what kind of information it was necessary to obtain from piano pupils; (2) the formulation of clear, short, and simple questions, without anticipating pupils' answers; (3) the avoidance of long or double-barrelled questions, questions involving jargon, or leading and biased questions; (4) the inclusion of 'what', 'why', and 'how' questions, as they may provide descriptive, explanatory, and interpretive answers. The questionnaires were originally written in Portuguese and translated into English by the researcher. A model of the questionnaires can be found in Appendix B.

4.2.3.5 Teachers' observation form

A special form, based on the criteria for observation adopted by this study, was developed in order to obtain from the participant observers - piano and Alexander teachers, and the researcher - weekly written feedback concerning each pupil's evolution throughout the experiment. The form also had free space for observers to add other additional comments. It was possible to understand the process experienced by the pupils, many of the interactions between teachers, pupils, and peers, and many

of the pupils' personal and attitudinal characteristics. The forms were completed in Portuguese and translated into English by the researcher. Appendix B offers a model of the teachers' observation form.

4.2.1.6 Group discussions

Group discussions involve some kind of collective activity, such as debating and exploring a specific issue. These differ from other categories of interviews by the use of group interaction to generate data (Barbour and Kitzinger 1999: 4). In this kind of approach, the researcher or moderator can explore peoples' impressions and experiences around the topic under scrutiny, keeping at the same time some control of the situation. This study adopted group discussions in which independent observers (doctors, pupils' piano teachers, other piano and music teachers, and Alexander teachers) were invited to form groups and watch the videos of piano pupils' performances (pre-and post-tests), assessing their conditions, and having as a reference the pre-established criteria of observation. As a moderator, the researcher tried not to interfere with the participants' conversations, only monitoring the time and provided technical support, such as playing and repeating the pupils' performances. The researcher also intervened when someone dominated the conversation, or when the participants took too much time on a specific topic. The oral accounts provided by the independent observers were recorded and transcribed into English by the researcher, except the Alexander teachers' discussions, which were originally heard in English.

4.2.2 Criteria of observation

As previously mentioned, all the observers used the same criteria for observation, with sub-criteria as a reference to assess the piano pupils' psycho-physical and performing changes. The criteria then included the following items and sub-items:

Pupils' physical conditions:

- Posture of body and hands
- Physical tension level

Pupils' attitude:

- Ability to focus on the activity
- Mental calmness
- Self-confidence
- Motivation

Pupils' piano performance:

- Ability to monitor performance
- Tone quality
- Rhythm quality
- Phrasing
- Dynamics

As mentioned above, the participant observers (the piano and Alexander teachers and the researcher) used the criteria included in the teachers' observation form. Scores were also included in the form, to evaluate each item (very good, good, more or less, poor, and bad), providing quantifiable data that will be dealt with in Chapter 8. The item 'pedals' was not included in the criteria because some pupils played pieces that did not require their use. Only for the piano teachers, a fourth item, 'practice', was included, so that it would be possible to obtain some information about the pupils' levels of practice at home. The Alexander teacher completed only the first two items - on pupils' physical conditions and attitude. The piano pupils did not have access to the criteria. The independent observers (doctors, Alexander teachers, other piano teachers) received a copy of the criteria before watching the pupils' pre-and post-tests performances.

The criteria for observation were intended to provide a reference for the observers, not to limit their contributions. Additionally, the criteria gave to the research internal

organisation, linking its theoretical and empirical aspects. The observers' written comments and dialogues largely transcended the items in the criteria; this will be demonstrated in the chapters on data analysis.

4.2.3 The research location

For many reasons, the Villa-Lobos Núcleo de Educação Musical (Núcleo), a private music school in Belo Horizonte, Brazil, was considered to be an ideal environment for the empirical research. Firstly, I had previously worked in this school as a piano teacher and Head of Piano, so it was possible to get the necessary support and the piano pupils and teachers' cooperation. Secondly, the school directors and teachers have always been interested in improving their teaching, and research such as this would contribute to their own progress. Besides the school is open for future investigations on the research topic. Finally, the children who study the piano at the Núcleo belong to similar social backgrounds and have piano lessons in pairs, which facilitated the matching process.

To summarise, the triangulation of methods and investigators and the research location together provided the conditions necessary to the development of the empirical study. The experimental approach created an appropriate scenario for observing the Alexander Technique's effects on piano pupils' performance, and the recordings of piano and Alexander lessons provided audiovisual material that could be shared with others. Within this experimental setting, all the participant observers, as well as the independent observers, provided a large amount of qualitative data, and also some quantifiable data. Table 4.1 (next page) summarises the research design, emphasising the complementary interplay among the methodological and the investigator triangulations.

Table 4.1 Summary of the research design

Methodological triangulation		**Investigator triangulation**
Experimental approach (matched pairs)	*Creating an appropriate scenario*	
Audiovisual materials	*Allowing others to see the visual data*	
Teachers' observation form	*Minimising the research bias* *Providing internal validity*	**Teachers and researcher's written accounts**
Group discussions	*Helping the researcher to avoid ideological interpretation*	**Independent observers' oral accounts**
Questionnaires	*Allowing a deeper understanding of the topic*	**Pupils' written accounts**
	Confirming or modifying the research findings *Complementing each others' observations*	
Interviews	*Linking the theoretical and empirical aspects of the research*	**Brazilian piano pedagogues' contributions**

4.2.4 Reliability, validity, and generalisation

In qualitative studies, internal validity is considered to be vital (Vaus, 2001: 27-8; Creswell, 2003: 195-6), as such studies need to be able to sustain their conclusions (Vaus, 2001: 27-8). Although reliability and generalisability play a minor role in qualitative research (Creswell, 2003: 195-6), it is necessary to some extent, to generalise the study's conclusions to other situations: if this can be done, it provides external validity. According to Creswell (2002: 196), among others, the following procedural strategies help researchers to validate and ensure reliability in qualitative studies:

- *Methodological triangulation,* which provides different data-sources;

- *The researcher's constant presence in the field*, which allows an in-depth understanding of the events under investigation;
- *Rich and detailed description*, which transports readers to the data collection setting;
- *Presentation of discrepant information,* which shows the different perspectives found in the data description;
- *Presentation of the researcher's bias*, which allows self-reflection and provides an honest narrative.

As this research emphasised a qualitative experimental approach, with a relatively small data set, all the strategies offered above were considered before the collection of data. Triangulation was already included in the research design. The researcher was always present in the field, observing the piano teachers' and pupils' reactions and their interesting additional comments. The observers' comments are preserved through the detailed descriptions of events offered in the chapters on data analysis. Additionally, their comments revealed the bias produced by the research process, and by the researcher, and also showed limitations of the research, as will be seen in later parts of this thesis. The procedural strategies indicated by Creswell, and the recognition of the research's limitations, allow the study to claim internal validity.

Wide generalisation is not, however claimed for this study. Creswell (2003: 195) suggests that researchers may be able to generalise some aspects of the investigation, providing multiple case analysis. As we shall see later, the findings of the main study correspond to many of the reports on the effects of the Alexander Technique on performance provided by musicians and researchers. Therefore it is possible to suggest that further research on the topic, using different samples and locations, may come across similar findings. Nevertheless, ecological validity can be claimed because the sample used in the present study represents the typical young middle-class piano pupils who attend private music schools in Belo Horizonte, and other Brazilian cities. Besides, repercussion of the research process in the local context was immediate, as will be shown in the concluding chapter.

4.2.5 Ethical issues

Piano pupils' parents received a text providing general ideas about the research. They were required to give written permission, so that the researcher could include their children's images and performances in the research. The piano and the Alexander teachers, as well as the independent observers, did not receive any specific written information, as they had been in touch with the researcher as colleagues, and were willing to participate in this study. They informally agreed with the conditions established by the research process.

An ethical concern emerged in this study, during the process of data analysis. The piano pupils' images expose them too much, and confidentiality of their identity is compromised, even with changes of names. Nonetheless, without the visual data offered here, the data analysis would be obscured; readers would be deprived of an important source of information, and most likely would hardly understand what happened to these pupils. A second concern, which also refers to the safeguarding of pupils' identity, emerged especially during the analysis of pupils' attitudinal problems, presented in Chapter 6. Such analysis may be considered beyond the researcher's capacity, as she is not qualified as a psychologist. To avoid ethical error, the researcher attached the process of analysis to the comments offered by the observers, which were mainly provided by the piano teachers who have been dealing with those pupils for some time. Additionally, the researcher observed these facts in the light of theories developed by Lowen (1982) and Keleman (1996). To avoid all reproach, for the reasons presented above, a handout with the research findings and the pupils' pictures was sent to parents in August 2003, so that they became aware of how their children were presented in the thesis, and could confirm their original written permission.

It is essential to emphasise that the physical, attitudinal and performing difficulties presented by the piano pupils in this study are an example of what is probably happening to other piano pupils, and also to many of us, including Alexander and

piano teachers. Such problems may have complex and unconscious origins, and may be beyond our awareness, choice, and control. In this light, the children who have been under examination in this study are indeed benefiting all of us, who are interested in understanding our own psycho-physical and performing difficulties. Thus the research analysis invites us, parents and teachers, to review our roles as educators, since many of the psycho-physical difficulties presented by children reflect the adults' limitations and educational inabilities.

4.3 The fieldwork

The data collection process was conducted according to the research design presented above. As previously stated, the empirical research includes a pilot study (Appendix C) and a main study, which were carried out at the *Núcleo* in Belo Horizonte, Brazil. What follows is a summary of the main features of the main study.

4.3.1 The main study

The ideal number to participate in the main study was twenty-four piano pupils, aged between nine and fourteen. The *Núcleo's* director could find twenty-two pupils who formed eleven matched pairs. However, in the first week, one of these pupils dropped out of the music school, and thus one pair was lost. The twenty remaining pupils formed ten matched pairs, and were randomly assigned to the experimental and control groups. Six piano teachers gave them piano lessons, and the same Alexander teacher gave lessons to the experimental group. Below, the piano teachers are presented together with their respective pairs of pupils. To each pair of pupils codenames were given, starting with A, B, and C, until J.

Teacher A

Pair 1: Adam (control group 1) and Alan (experimental group1) - age 13

Adam (control group 1): Jon George - Móbile

Alan (experimental group 1): Roger Grove - Blues Motif

Common piano piece: Dimitri Kabalevsky – The Clown (24 Little Pieces opus 39/N° 20).

Pair 4 - Ben (control group 4) and Bob (experimental group 4) - age 12

Ben (control group 4): Jon George - Knight's Tale

Bob (experimental group 4): Martha Mier - Indian Dance

Common piano piece: Mozart - The Queen's Minuet

Teacher B

Pair 2 - Colin (control group 2) and Conor (experimental group 2) - age 11

Colin (control group 2): David Kraehenbuehl - Yankee Doodle Drum

Conor (experimental group 2): David Kraehenbuehl - Broken Record Boogie

Common piano piece: Martha Mier - Sneaky Business.

Teacher C

Pair 3 - Dora (control group 3) and Daniel (experimental group 3) - age 10

Common pieces: Lyn Olson - Bear Dance and Water Lily.

Teacher D

Pair 5 - Ed (control group 5) and Ella (experimental group 5) - age 14

Ed (control group 5): J. S. Bach – Minuet in G Major

Ella (experimental group 5): J.S. Bach - Two-part Invention N° 1 in C Major.

Common piano piece: Guerra Peixe - Seresta da Primeira Suíte Infantil N° 4

Pair 6 - Flora (control group 6) and Frank (experimental group 6) - age 12

Flora (control group 6): Dimitri Kabalevsky - The Clown (24 Little Pieces opus 39/N° 20).

Frank (experimental group 6): Dimitri Kabalevsky - Valse (24 Little Pieces opus 39/N° 16).

Common piano piece: Cláudio Santoro - Paulistana N° 1

Pair 9 - Greg (control group 9) and Glen (experimental group 9) - age 11

Greg (control group 9): Edvard Grieg - Peer Gynt Suite 1 opus 46 (Morning Mood)

Glen (experimental group 9): Roger Grove - Distant Chimes

Common piano piece: Nilson Lombardi - Miniatura N° 4

Pair 10 - Henry (control group 10) and Hugh (experimental group 10) - age 11

Henry (control group 10): Tarantella Italiana

Hugh (experimental group 10): Beethoven - Ninth Symphony (theme from last movement)

Common piano piece: Lorenzo Fernandez - Pastoral (Suite das Cinco Notas)

Teacher E

Pair 8 - Iris (control group 8) and Ivy (experimental group 8) - age 13

Iris (control group 8): Beethoven - Sonatina Wo 051 No 2

Ivy (experimental group 8): Heitor Villa-Lobos - Cirandinha N° 4

Common piano piece: Nilson Lombardi - Miniatura N° 4

Teacher F

Pair 7 - Joe (control group 7) and Jill (experimental group 7) - age 10

Joe (control group 7): Simon and Garfunkel - Blowing in the Wind

Jill (experimental group 7): Lyn Olson - Sweet Dreams

Common piano piece: David Kraehenbuehl - Haunted House Rock

The main study took twelve weeks, from August to November 2002. The first four weeks constituted a baseline in which piano pupils did not have any special treatment. In the first week of this period, piano teachers introduced a new and common piano piece for each matched pair of pupils. During the baseline, and until the end of the

experiment, the piano lessons were recorded. The piano teachers and the researcher assessed each pupil, filling in the teachers' observation form.

In the last week of the baseline period (week four), a pre-test of all piano pupils was administered at the end of the fourth piano lesson. In the pre-test, the pupils played the piece established by their piano teachers at the beginning of the baseline, in spite of the fact that many pupils still did not know their pieces well. For this reason, the researcher asked them to perform a second piece, so that observers would have more to see of each pupil, if necessary. So, as the CD Roms 1 and 2 show, pupils' pre-tests contain two pieces, 'piece a' and 'piece b'.

In the fifth week, the experimental group started having Alexander lessons, and the Alexander teacher filled in the teachers' observation forms weekly. The Alexander lessons did not take place before the piano lessons, so the experimental group had 'periods of Alexander practice' with the researcher during their piano lessons, whilst the control group had their 'sessions on mythology'. These periods lasted between fifteen and twenty minutes, so pupils had time to work together in the piano lessons.

All piano pupils were requested to complete two short questionnaires. The experimental group answered questionnaires related to the Alexander lessons. The first questionnaire focussed on their impressions and understanding of the Alexander work. The second focussed on their perceptions of their own physical conditions (for instance, levels of tension) and the effects of the Alexander lessons on their piano playing. The control group also completed two questionnaires of the same kind. However the issue for them was mythology.

On the final week of the experiment (12th week), a post-test was administered with the same pieces 'a' and 'b' at the end of that piano lesson; the performers were watched in December 2002 by the following independent observers:

- *Panel of piano teachers* formed by the six piano teachers who gave lessons to the pupils. The six piano teachers watched the pre-and post tests together;
- *Panel of musicians* formed by five other five piano teachers, who did not tech the pupils. These five musicians were split into two groups to watch the pre- and post-tests (two teachers in one group, three in the other);
- *Panel of doctors* formed by three medical practitioners who deal with musicians' injuries. One of the doctors saw the pre-and post-test alone, whilst the other two saw the tests together.
- *Alexander panel* formed by four Alexander teachers. This was the only group discussion conducted in London (May, 2003). Two of these teachers saw the pre-and post-tests separately. The other two watched the tests together.

Due to time availability, the panel of musicians, the panel of doctors, and the Alexander panel were split into groups, as described above. This was initially not planned, but the separation of observers who belonged to similar categories was positive, as they had less opportunity to influence each other's opinions, providing less biased observations. The panel of teachers could be biased to some extent, but it was interesting to notice that the teachers refrained from saying much about their own pupils, as they wished to listen to their colleagues' observations. The comments which they made, however, revealed relevant details about their own pupils. All the written and oral data collected during the experiment was transcribed into English by the researcher. Only the Alexander panel's observations were made originally in English.

4.3.2 Research limitations and circumstances that interfered with the process of observation

In the process of data collection and analysis some limitations and problems of the data collection came into light. Some problems occurred due to technical limitations,

and will probably be recognised in pupils' performances (CD Rom 1 and 2). The researcher herself made mistakes that could have been avoided. Other problems were beyond the researcher's control. These are as follows:

4.3.2.1 Technical failure

Usually, video-recordings provide a better quality of image than of sound. The recordings were made by a Sonny digital camera -TRV 340. The researcher also tried to use a microphone to improve sound quality. However, the microphone failed in the recording of the first pre-test. So it was avoided in the recordings, as this would differentiate the quality of sound among the tests, representing one more variable to consider. As a consequence of this technical limitation, the tests do not reproduce the sound as well as is needed for this kind of investigation. Detailed observations concerning pupils' changes in tone quality may be restricted due to this problem.

4.3.2.2 The researcher's errors

In the pre-test, the piano had not been tuned and produced a noise on the sustaining pedal, which is noticeable in the pupils' performances. Before the post-test recordings, the school's director provided a solution for this problem, which should have been requested by the researcher from the beginning. The piano was tuned and the noise produced by the pedal disappeared, so the piano sounds better in all post-tests. Photographs and video-recordings of pupils' hands were not made, which is a loss for this study. It would have been also possible to take pupils' pictures from time to time, in order to obtain a clearer picture of their physical conditions, as well as the evolution and oscillations of these conditions throughout the experiment. Ideally, the piano pupils should have been invited to see and assess their own performances at the end of the experiment; this did not occur. As indicated by music educators in Chapter 3 (page 138), such a process would highlight the importance of pupils' awareness concerning their own qualities and difficulties, and could have been used in this study to complement and reinforce the assessment made by the observers.

However, a most serious fault happened at the end of the experiment. Trying to reproduce the techniques adopted by Wilfred Barlow in his research on the Alexander Technique, before recording the post-tests the researcher requested three pupils of the control group to sit in a relaxed way, and then to sit in their best way for playing the instrument. This request was not repeated with the other pupils of the control group, as it would be a source of bias in the research. Its use produced a significant variable that probably changed the research findings. Nonetheless, this mistake turned into something positive in the process of data analysis, as we shall see in due course.

4.3.2.3 *Some uncontrolled factors*

The research presents obvious limitations, since the piano pupils in the experimental group had just nine half-hour Alexander lessons; this represents a mere introduction to the Technique. Thus this study could only observe the short-term effects of the Alexander Technique in pupils' piano performance. This research would have benefited from having a longitudinal design. This was not possible due to lack of time and to financial constraints. In some performances of the pre-and post-tests one can see the light of the sun coming inside the room, which makes a difference in the environment. But this did not represent a major problem for the observers and for the research results. Some pupils occasionally used a cushion on the seat, whilst others did not. The cushion was available in the room. The researcher did not ask piano teachers or pupils to avoid the cushion, as this would represent interference in their normal practice, also restricting the ecological validity of the research.

4.3.2.4 The observers' remarks

As the recordings were taken from just one angle, it is difficult to see the pupils' specific tension; for instance mouth and hand tension. However, if many angles had

been recorded, the independent observers would have had too much to see, and the researcher would need to manage excessive data and consider many more details in the process of analysis. This study was not designed to embrace these details. Longitudinal case studies, which allow deeper investigations, will hopefully be conducted in the future.

One of the members of the panel of doctors and one of the members of the Alexander panel would have liked to see other details of pupils' bodies, which was not possible because of the kind of clothes which they wore. For instance, large shirts obscured the observation of pupils' trunks and some girls had long hair covering their nape. Some observers said that ideally the children should wear the same clothes in both pre-and post-tests. This is a good point for researchers to consider when conducting this kind of experiment.

4.4 The methods and sequence of the data analysis

The task in the four subsequent chapters, which deal with data analysis, is to present and interpret the consonances and dissonances among the observers' voices, together with the piano pupils' accounts on their experiences during the empirical research. Making sense of their comments, and putting them into a coherent whole in connection with the conceptual framework developed in the opening three chapters of this thesis, will finally allow the research question to be answered. But here, it is worth introducing the methods and steps of data analysis, which were based on ideas provided by Huberman & Miles (1994, 1998), Krueger (1998), Diamond (2001), Foster (2001), and Creswell (2003).

4.4.1 Asking questions and dividing the analysis process into phases

In order to understand to what extent the Alexander Technique could help young piano pupils to improve their piano performance, sub-questions emerged, focussing on the physical, attitudinal and performing changes in piano pupils during the experiment. The process of data analysis was guided by the following sub-questions:

- How far did the participant and independent observers indicate that the piano pupils had problems in each aspect?
- How far did the participant and independent observers indicate changes in the pupils in each aspect?
- Why did these changes occur?

To apprehend the diversity of views offered by the observers, to organise the aspects under investigation, and to answer the sub-questions, the analysis was divided into four phases; each phase will be presented in one separate chapter. Chapters 5, 6, and 7 correspondingly deal with the pupils' physical, attitudinal, and performing changes. The fourth phase of analysis is offered in Chapter 8, which compares the pupils' changes within pairs and within the experimental and control groups.

4.4.2 Comparing different settings of observation

Basic tools of analysis were the comparison of the comments provided by the observers, by the pupils, and also the comparison between the main studies' findings and those ones offered by other researchers and musicians (Chapter 3). Given that all the observers based their comments on the same criteria, the data contains homogeneous patterns of information, which were easily codified. The observes' comments were not completely consonant, though. Together with their agreements,

their divergent opinions and impressions will appear throughout the data analysis process.

The following steps were adopted to compare the observers' voices, and to organise and interpret the data:

- *Coding the data* - the data-text was read as a whole, and the researcher registered all patterns of physical-attitudinal-performing difficulties and abilities presented by each pupil, according to the observers' comments. As far as possible, similar difficulties and abilities were given the same names, so that codes were established.

- *Listing pupils' difficulties and abilities* - three lists of pupils' difficulties and three lists of abilities (physical, attitudinal, and performing) were written down. The respective names of the pupils who presented each specific difficulty were written in a parallel column, as well as the observers who indicated these difficulties. The lists of pupils' difficulties in the three aspects were compared with the original criteria for observation, and these which were not in the original criteria were inserted into them. As a result the original criteria were amplified and enriched.

- *Summarising and reporting the pupils' changes* - to report the observers' comments on each pupil's initial condition and subsequent physical, attitudinal, and performing changes, summary descriptions (Krueger, 1998: 113) were written down and summary-tables were produced. Illustrative quotations by the observers were selected and added to the summary descriptions. Even if only one observer noticed specific problems and subsequent changes in pupils, his or her comment was considered valuable; his or her codename appear in the summary-tables in connection with the pupils' problems and changes. In so doing, the research gave equal weight to the opinions provided by all observers.

- *Categorising the pupils' changes* - from the observers' comments, it was possible to notice that some changes that happened to the pupils were 'positive

and evident', whilst others were 'positive but minimal'. Some pupils did not change in some particular aspect, or in any aspect, and others got worse in some aspects. The pupils were then classified within these levels of changes, 'evident', 'minimal', 'no evident changes', and 'worsening'. When the disagreement between groups of observers was too obvious, or when there were variables that seriously interfered with the pupils' conditions in any of the three aspects, pupils were considered to be 'special cases'.

- *Explaining the pupils' changes* - the changes that happened to the pupils were interpreted in the light of the framework offered in Chapters 1 and 2 and especially in Chapter 3; possible explanations for their changes in the three aspects under investigations were provided, and initial research findings were indicated. It is important to highlight that most of the content offered in Chapter 3 was developed in connection with the events that occurred during the empirical studies. Thus one may consider that the thesis partially adopts a theory grounded on the empirical events.

- *Looking for other possible reasons for the pupils' changes* - the data was revisited so that it was possible to indicate other possible reasons for the physical, attitudinal, and performing changes experienced by the pupils in the experimental group, apart from the Alexander intervention and from specific musical factors.

- *Establishing relationships between the three aspects under scrutiny* - the changes that occurred to pupils in the physical, attitudinal, and performing aspects were combined, so that symmetries among these aspects could be established.

- *Looking at the piano teachers' expectations* - information was provided by the piano teachers, concerning their expectations of their pupils' improvements in performance and of their musical progress over time; this information allowed this study to provide qualitative and quantitative analysis of this data, and to report further findings.

- *Comparing the research findings with the findings provided by the literature review* - the research findings were summarised in tables as well as the musicians' reports on the effects of the Alexander Technique on their playing, previously presented in Chapter 3 (page 128). These results could be compared, which reinforced the internal validity of the research and suggested potential generalisation with regard to the effects of the Alexander Technique on musicians' performances.

All together, the steps described above allowed the study to achieve the research aims, and to propose further hypotheses, as will be seen in the next four chapters of this thesis.

Summary and conclusion

The present chapter has addressed the nature and purposes of the research, as well as the methods of data collection. The overall purpose of the empirical research is to provide grounds for reflecting on the limitations of piano pedagogy in the light of the Alexander principles. It was argued that a qualitative approach to the empirical research, which involves a triangulation of methods and investigators, is the most appropriate for this research. Together, diverse methods of data collection and different settings of observers provide tools for understanding the impact that Alexander lessons may have on piano pupils, and the reasons why it helps or does not help their performances. The chapter also addressed the issues of reliability, validity, and generalisation, the ethical concerns, and the research limitations.

The main empirical study carried out in Belo Horizonte, Brazil was described in some detail and it was asserted that the qualitative data produced by this study was rich and

diverse. Some quantifiable data was also produced. This complements the observational qualitative methods employed in the study. At the end, the methods and steps of data analysis were revealed, so that from now on the research can deal with the analysis of data.

Chapter 5

Looking for Physical Changes in in each Pupil

Introduction

This chapter opens the process of data analysis. It aims at assessing the initial physical conditions of the twenty piano pupils who participated in the main empirical study, and the subsequent physical changes that happened to them. The presentation and analysis of data will focus on the observers' comments on the physical problems presented by the pupils and their subsequent changes.

The pupils' physical difficulties and changes could be fitted into five categories: 'evident beneficial physical changes'; 'minor beneficial physical changes'; 'no evident physical changes'; 'worsening in the physical aspect'; and one 'special case'. Each one of these categories will be presented in a separate section. In each section, a summary of the findings will be offered in tables, as well as a descriptive summary of each piano pupil's initial physical conditions and their changes, with illustrative quotations by the observers. The sections also offer possible explanations for what happened to the pupils, founded on Bienfait's and Alexander's views on musicians' psycho-physical problems. A final section summarises the findings, discusses the specific pianistic technical problems observed in the piano pupils in connection with the points raised by the piano pedagogues in Chapter 1, and concludes the chapter.

The original criteria for observation, which arose from the literature review, were adopted by the observers as a reference for their assessments of pupils' physical conditions and included two categories: posture of body and hands, and levels of tension. As will be seen in this chapter, these criteria were amplified by the observers, as they offered other topics, which are considered as sub-criteria. The table below summarises the categories of the physical problems shown by the pupils, including the original criteria and the sub-criteria of observation. All the physical problems and difficulties presented by the pupils could be fitted into these main categories.

Table 5.1 Categories of the physical problems presented by piano pupils

Postural problems - *all kinds of head and neck problems (projections and retractions) and trunk compensations (lordosis, kiphosis, scoliosis).*

- Bad sitting position - *pupils sitting too far or too near the keyboard whilst performing, or with bad sitting posture.*

- Bad hand position - *collapsed knuckles of the hands; extended fingers; wrists too low or too high; forearms below or above the keyboard level.*

- Leaning towards the keyboard - *projecting the body on the keyboard and losing uprightness.*

- Lack of contact with the keyboard - *fingers not supported on the keyboard.*

- Disconnection between parts of the body - *problems of coordination (for instance, between hands); bad pedal coordination.*

Excessive tension - *specific tense areas (for instance, neck, arms, hands) or generalised tension.*

- Restricted or difficult breathing.

- Pain - *reported by the pupils themselves.*

Lack of grounding - *lack of feet support on the floor or lack of support on one's sitting bones.*

Excessive effort when playing the piano

Excessive movement when playing the piano

Lack of vitality - *lack of energy when playing the instrument or tiredness.*

As much as possible, the descriptive summaries preserved the observers' original terminology. The doctors tended to use terms such as 'lordosis', 'kiphosis', and 'neck retraction'. Alexander teachers tended to say 'neck going back and down', 'allowing the neck to release so that the head could go up', 'pulling down', 'the pupil is going down', 'the pupil is going up', or 'more up'. Many referred to 'collapse', especially the Alexander and piano teachers, and the musicians. The term 'collapse' as used by the observers is an umbrella term, including all kinds of postural distortions; it means that the pupils did not present a balanced upright posture.

It is important to remind readers that many voices will take part in this chapter and in the next chapters on data analysis. They will be always referred to as highlighted in italics below.

- The participant observers: piano pupils, who were given *codenames*; the piano *teachers A, B, C, D, E,* and *F*; the *Alexander teacher*; and the *researcher*;
- The independent observers: the panel of piano teachers, *teachers A, B, C, D, E,* and *F*; the musicians panel members, *musicians A, B, C, D,* and *E*; the panel of doctors, *Doctors A, B, and C*; and the Alexander panel members, *Alexander A, B, C,* and *D*.

5.1 Evident beneficial physical changes

Four pupils in the experimental group had evident physical changes: Alan (experimental group 1), Daniel (experimental group 3), Bob (experimental group 4), and Frank (experimental group 6). Interestingly, three pupils in the control group also presented evident changes in their physical conditions: Adam (control group 1), Colin (control group 2), and Dora (control group 3).

5.1.1 Evident beneficial physical changes in four pupils in the experimental group

Alan (experimental group 1), Daniel (experimental group 3), Bob (experimental group 4), and Frank (experimental group 6).

5.1.1.1 Alan, experimental group 1 - CD Rom 1, picture 5.1, table 5.2

In the pre-test performance, Alan presented a strong pattern of moving the head forwards and down, and falling to one side; the habit of looking down; a lumbar collapse when sitting, and a flaccid lumbar musculature which made it difficult for him to support himself well on his sitting bones. He was sitting too much on the coccyx, 'on his back', which made it difficult for him to breathe. The seat was too low for him, as he has long legs, and also because his elbows were below the keyboard level; so he had to make an effort to move his wrists, fingers, and elbows when playing the instrument. His feet turned out, with the weight of his body mainly supported by the right foot. He had compulsive tics in his body, and difficulty in supporting himself erect. Alan also presented some disconnection between the right and left hand movements, as if the two hands did not belong to the same boy.

(a) Pre-test (b) Post-test

Picture 5.1: Alan (experimental group 1) - Pre-and post-tests pictures.

Typical comments by the observers included:

> This boy has a posture I would call deplorable…He is a great arc. Impressive, isn't it? A significant retraction of the neck, a great kyphosis, he is collapsed, sitting on his sacral region, not on his ischium. This situation is enhanced according to what he is doing on the piano…he is almost a little armadillo. Look where his head is going! (Doctor A).

Table 5.2 Evident beneficial physical changes - summary of pupils in the experimental group

	Initial physical conditions	Physical changes
Alan experimental group 1	**1. Postural problems** - *Doctors A, B, C, Alexander A, B, C, D, musicians B, D, E, teachers A, B, C, D, E, F, Alexander teacher, researcher* →	Improved posture - *Doctors A, B, C, Alexander A, B, C, D, musicians A, B, C, D, E, teachers A, B, C, D, E, F, Alexander teacher, researcher*
	- Bad sitting position - *Doctor A, B, C, musicians B, D, E, teachers A, D, Alexander teacher, researcher* →	Improved sitting position - *Doctors A, B, C, Alexander A, B, C, D, musicians A, B, C, D, E, teachers A, B, C, D, E, F, Alexander teacher, researcher*
	- Bad hand position - *researcher*	
	2. Excessive tension - *Alexander teacher, researcher*	
	3. Lack of grounding - *Doctors B, C, Alexander teacher, researcher* →	Improved grounding - *Alexander B, Alexander teacher, researcher*
	4. Excessive effort - *Doctor B*	
	5. Excessive movement - Doctor A, *Alexander teacher, researcher* →	Decreased movement - *Doctor A, researcher*
	6. Lack of vitality - *Doctor B, Alexander teacher*	

5.1.1.2 Daniel, experimental 3 - CD Rom 1, picture 5.2, table 5.3

Daniel was considered to be a tense boy in the pre-test. He had tense neck, arms, hip joints, and legs. His shoulders were not only tense, but also projected forwards. He

was hyper-extending his fingers, collapsing the arcs of the hands, and narrowing his chest whilst playing the piano. Daniel seemed to have difficulty in breathing. The Alexander teacher said:

> Daniel "controlled" himself too much. When he started releasing on the table, he presented compulsive trunk and shoulders movements (Alexander lesson 2).

Daniel projected his trunk forwards, twisted his spine, and had the habit of inclining his head to the left. He presented the habitual pattern of raising his chin when trying to be erect. He had some disconnection between his hands. Finally, he did not present well supported feet, which were turning out all the time.

Table 5.3 Evident beneficial physical changes - summary of pupils in the experimental group

	Initial physical conditions		Physical changes	
Daniel experimental group 3	**1. Postural problems** -	*Doctors A, B, C Alexander A, C, D musicians B, C teachers C, F Alexander teacher researcher*	→ Improved posture -	*Doctors A, B, C Alexander A musician E teachers A, B, C, D, E, F Alexander teacher researcher*
	- Bad sitting position -	*Doctor B researcher*	→ Improved sitting position -	*Doctor A musicians B, C, F researcher*
	- Bad hand position -	*researcher*		
	- Disconnection between parts of the body -	*musicians B, C Alexander teacher*		
	2. Excessive tension -	*Doctors A, B, C Alexander A musicians A, B teacher C Alexander teacher researcher*	→ Decreased tension -	*Doctors B, C musicians B, E teachers C, F Alexander teacher researcher*
	3. Lack of grounding -	*musicians B, C, E teachers C, F researcher*	→ Improved grounding -	Doctor A *musicians B, E teachers C, F Alexander teacher researcher*
	4. Excessive movement -	*teacher C Alexander teacher researcher*	→ Decreased movement -	*Doctor A researcher*

(a) Pre-test (b) Post-test

Picture 5.2: Daniel (experimental group 3) - Pre-and post-tests pictures.

5.1.1.3 Bob, experimental group 4 - CD Rom 1, picture 5.3, table 5.4

In the pre-test, the observers noticed that Bob presented a generalised pattern of tension and bodily hyperactivity. He had difficulty in 'stopping doing', presenting excessive movements, especially of his legs and mouth. Bob had tense wrists, arms, and shoulders; his posterior neck region, hip joints and legs were particularly tense. He often shrugged his shoulders upwards. He was narrowed down, and his eyes were fixed on the music score. Bob was not balanced on his feet and his breathing was quite short. Bob had a tendency to collapse his lumbar area when sitting down.

(a) Pre-test (b) Post-test

Picture 5.3: Bob (experimental group 4) - Pre-and post-tests pictures.

Table 5.4 Evident beneficial physical changes - summary of pupils in the experimental group

	Initial physical conditions		Physical changes
Bob experimental group 4	**1. Postural problems** - *Doctors A, B, C, Alexander A, B, musicians B, D, E, teachers A, B, C, D, E, F, Alexander teacher, researcher*	→	Improved posture - *Doctors A, B, Alexander A, B, C, D, musician C, teachers A, B, C, D, E, F, Alexander teacher, researcher*
	- Bad sitting position - *researcher*	→	Improved sitting position - *Doctors A*
	- Bad hand position - *researcher*		
	- Disconnection between parts of the body - *Alexander A, musician A, teachers A*		
	2. Excessive tension - *Doctors A, B, C, Alexander A, B, C, D, musicians A, C, D, teachers A, B, E, Alexander teacher, researcher*	→	Decreased tension - *Doctors A, B, C, Alexander A, B, C, D, teachers A, B, C, D, E, F, Alexander teacher, researcher*
	3. Lack of grounding - *Alexander teacher, researcher*		
	4. Excessive movement - *Doctor A, Alexander A, musicians C, D, E, Alexander teacher, researcher*	→	Improved grounding - *Alexander D*
	5. Lack of vitality - *Doctor B, Alexander teacher*	→	Decreased movement - *Doctor B, musicians D, E, Alexander teacher, researcher*

Looking at Bob's pre-test, the doctors and his piano teacher called attention to his excessive tension and motor coordination difficulty:

> His tension goes from the neck to the fingers (Doctor C).
>
> He makes several movements trying to adjust himself. He must feel uncomfortable when playing. He inverts the situation from a lordosis to a kyphosis. He projects his head forwards and retracts his neck spasmodically. His thighs are turned in (Doctor A).
>
> This pupil is a challenge, because we repeat the same things lesson after lesson, and he continues with the same rhythm and motor difficulties (teacher A).

5.1.1.4 Frank, experimental group 6 - CD Rom 2, picture 5.4, table 5.5

Frank was, in general, relaxed, well aligned, and had freedom of movements. But in the pre-test performance, he showed a tendency to incline his trunk backwards, and to project his head forwards, inclining it to one side. He also had a tendency to contract his scalenus. The sides of his neck were tense and he had the habit of fixing the knees back. Frank was not very well grounded. He had a lordosis, and some pain in his lateral lumbar area. He told the Alexander teacher that he felt uncomfortable when sitting down.

(a) Pre-test (b) Post-test

Picture 5.4: Frank (experimental group 6) - Pre-and post-tests pictures.

Table 5.5 Evident physical changes - summary of pupils in the experimental group

	Initial physical conditions	Physical changes
Frank experimental group 6	**1. Postural problems** - *Doctors A, Alexander A, researcher*	→ Improved posture - *Doctors A, B, C, Alexander A, B, C, D, researcher*
	- *Bad sitting position* - *musician A*	- Improved grounding - *Doctor B, Alexander teacher*
		- Improved flexibility - *musician E, teacher A*
	2. Slight tension - *Doctor A, B, Alexander teacher*	→ Decreased tension - *Doctor B, musician E, teacher A*
	3. Pain (lumbar area) - *Frank (experimental group 6)*	→ Absence of pain - *Frank (experimental group 6)*

5.1.2 Evidence of physical changes in four pupils in the experimental group

To the majority of observers, these four pupils in the experimental group - *Alan, Daniel, Bob, and Frank* - showed significant physical changes in the post-test performances. Some observers used words such as 'enormous' and 'impressive', 'huge', 'incredible', and an 'amazing difference' to describe these changes. Some though that Alan and Frank were not the same boys in the pre-and post-tests. Overall, they seemed to have grown in stature, to be more connected (for instance, their arms were more connected to their backs), and more grounded. They improved their sitting position and hand coordination and reduced their trunk collapses and compensations (lordosis, kiphosis), excessive movements, and tension. Examples of interesting comments by the observers are:

The doctors talking about *Alan's* changes:

> *Doctor B* - It is the same boy? This is unbelievable. He certainly had Alexander lessons. It seems to be another boy. His neck is elongated.
>
> *Doctor C* - All this? It is serious? My goodness! It is impressive what has happened to this boy! This boy must have had Alexander lessons!
>
> *Doctor B* - What a radical change!

The piano teachers (panel of piano teachers) used a metaphor to explain Alan's physical changes. They compared his changes with the metamorphosis that happens to butterflies, which leave the cocoon and are free to fly:

> *Teacher D* - Metamorphosis!!! Now he is a butterfly!! This is another person!!
>
> *Teacher B* - His size has changed!!!
> *Teacher D* - I think everybody saw a metamorphosis. That boy was falling to one side and later....

Teacher A - Yes, he has been transformed into another being…

Talking about *Daniel's* changes, the piano teachers (panel of piano teachers) once more used the 'butterfly' metaphor:

Teacher D - Ah, it is this one!!!

Teacher C - This is the butterfly! It seems that he is more stable; before, he did not have much contact with the piano, feet in the air, but in the [post-test] performance he is really sitting down. As his body posture and his hand position changed, it was easier and safer for him to play, and this produced musical improvement.

Teacher F - I have no doubt there is a difference. He put his feet on the floor, sat down, and played. He had more intimacy with the instrument, not only with the piece, but also with the instrument.

Watching Daniel's post-test, the doctors said:

Doctor B - My goodness, he is positioned now. He has experienced such a change in his postural situation. Look at his feet. Now he is all right, 90 degrees, correct. What is more noticeable is that he has become elongated.

Doctor C - He is re-aligned.

Doctor B - It is essential to sit correctly at the instrument, looking forward, without that rotation. But the most important change that happened to him was the release. He is much more relaxed.

Bob's improvements in the post-test were exciting for the Alexander panel member D:

> Oh dear. It is amazing! That is just so incredible! Fantastic! Just absolutely amazing! The feet are further back. So that's helping him to ground…he was much more up!

Frank was considered to show a major physical improvement which goes beyond posture, as the quotations below illustrate:

Doctor A - There is a striking difference in this boy. Very interesting…he is looking at the keyboard without leaning on the keyboard. Among all these pupils, this is the one who experienced the biggest difference. He keeps the axis of his head in connection with the trunk.

Researcher - I saw direction in this boy.

Doctor A - It is remarkable. He is as a whole.

Researcher - I also noticed that his chest is wider.

> *Doctor A* - Yes, it is wider. This one was impressive. The Technique had a tremendous effect on him.

The Alexander panel members also saw a major difference in Frank's postural condition:

> *Alexander panel member D*: - God! Look at the neck! Oh! It's amazing, isn't it? Absolutely amazing! Who would believe it possible? He is already quite opened there [pre-test], but, you know, it's even more here [post-test]. It's fantastic, very nice. Much more "up". Beautiful…The widening, the arms, the back, he's got much more in his back. It's so poised…Centred. He was already quite good here, he is already quite up, he was not very "pulled down" [pre-test]. He is more grounded, and he is so much more "up" [post-test]…That is remarkable, look at him, the width, and the opening here [chest, back]. And the shoulders!

Alexander panel member A - My God, that's impressive! Somehow, he has really changed his whole attitude, from "being there", to "being with it", with the instrument and the music. He is definitely connected with his back. His whole body is "doing it". That's very lovely to see.

Researcher - I didn't realise that Frank had understood so much about the Alexander work.

Alexander panel member A - Well, his system has understood, yes?

Two interesting points must be emphasised here, concerning the observers' comments on the physical changes which had occurred with these four pupils in the experimental group. Firstly, Alexander panel member D did not notice any physical change in Daniel (experimental 3). Secondly, many observers noticed that Alan (experimental group 1) and Bob (experimental group 4) tended to lose their physical improvements during the post-test performances. But even so, as the Alexander panels members B, C, and D, highlighted, they were able to finish the performance of the post-test in better physical condition than the one presented in the pre-test performance.

5.1.3 Possible reasons why some pupils in the experimental group presented evident physical changes

As stated by Bienfait in Chapter 3, in terms of human physiology the physical problems presented by piano pupils are associated with lack of appropriate postural tonus and consequent postural imbalances (especially in the cervical and pelvic areas), that are compensated by the trunk generating spinal deformities (scoliosos, lordosos, and kiphosis). In Chapter 3, it was also stated that, in the Alexander view, such physical problems are associated with harmful habits of use of the psycho-physical self, which constitute 'misuse'. To avoid misuse and adopt a 'good use' in piano playing, pupils would need to have a 'psycho-physical attitude' in which the 'primary

control' (head, neck, and trunk relationship) is well aligned and working with 'mechanical advantage': uprightness, lightness, and freedom of movements would occur as a consequence of such an attitude.

Three of these pupils did not present a satisfactory psycho-physical attitude in the pre-test performances: Alan (experimental group 1), Daniel (experimental group 3), and Bob (experimental group 4). Their primary control was working badly. As a consequence, they showed head and neck projections and retractions, exaggerated spinal curvatures, lack of support of their feet on the floor, bad hand and sitting positions, and excessive tension, movements, and effort to play the instrument.

On the other hand, Frank (experimental group 6) seemed to be well aligned from the outset. This shows that the degrees of physical misuse were different among these pupils, indicating that each one would probably react to the Alexander lessons in a different way, and would need more or less time to benefit from its potential effects. But if the physical changes that they experienced can be attributed to the Alexander Technique, the following reasons may explain why such changes occurred.

Firstly, the Alexander Technique provided practical principles of action that helped these piano pupils to change the wrong conditions of use of their primary control. Through the principle of 'inhibition', the pupils could release excessive tension (especially Daniel - experimental group 3 and Bob - experimental group 4). Alexander (1910: 172) affirms:

> The properly coordinated person employs a due amount of tension in such a way that the tendency of the spine and legs is to lengthen, and the equilibrium is such that the undue pressure through the floor is absent, and there is a lightness and freedom in the movements of such a person that is most noticeable.

Secondly, 'inhibition' also helped the pupils to stop interfering with the natural working of their primary control. Dimon (1998: 13) explains that:

> ...the body is designed to support itself against gravity, and the patterns of tension with this response...when we retract the head and shorten the body, this muscular system is interfered with, and the result is muscular collapse, imbalance, and compensation. In contrast, the lengthened condition of the head and torso produces the conditions under which this muscular support network can work optimally, allowing the muscles that support the body to work efficiently and with a minimum effort.

Thirdly, together with the inhibition of misuse, the emergence of antagonistic directions (for instance, grounding on the floor and going 'up'; widening the shoulders and chest) provided a lengthening of the pupils' spine and an expansion of the different segments of their bodies. As Carrington (1970: 6) states, the effortful process of resisting gravity is decreased when better poise and balance come into play, and also when there is an equation of forces, brought about by the interplay of the sensory and motor mechanisms. For this reason, some pupils seemed to have elongated their necks and grown in stature (especially Alan - experimental group 1 and Frank - experimental group 6). Gelb (1981: 50) adds that:

> The Alexander Technique encourages the lengthening of habitually contracted muscles of the spine, with the result that the upright posture is supported by a better balance of the skeletal and muscular system. This balance is reflected in improved muscle tone and a corresponding expansion in the spine. A key role in this expansion is played by the fluid-filled cartilaginous discs between the vertebrae. When the bones and muscles start to work in a balanced way, undue pressure on the discs is relieved and they can expand.

The experimental pupils' own perceptions of their gradual physical improvement was reported by the Alexander teacher, as follows:

During the week, *Alan (experimental group 1)* remembered that he could release the weight of the body on his feet (Alexander lesson 4). He told me that he discovered the possibility of looking down without collapsing his neck, especially when playing the piano, when he is looking at the keys. With the stimulus of the hands on the keyboard he was able to release his head and align his spine better (Alexander lesson 8).

Daniel (experimental group 3) told me that he had learned to stop and organise his body before he started playing the piano (Alexander lesson 9).

Bob (experimental group 4) told me that he remembered to let his body loosen during the last piano lesson, and that he felt it was easier to play (Alexander lesson 3). He told me that, when walking to the shops, he noticed that his body could be more erect (Alexander lesson 4).

Frank (experimental group 6) told me that lately he does not feel pain in his back as before (Alexander lesson 7). He told me that he has learned the importance of balancing his body through keeping his feet grounded on the floor and releasing his neck, so that his head can go up (Alexander lesson 9).

The comments provided above confirm what has been discussed by Bienfait in Chapter 3, concerning the direct effect that the position of the head and eyes have on balance and on movement. Comments made by the observers reinforce this point, and suggest that the Alexander Technique had a positive impact on the pupils' eyes in connection with their overall balance. To refer back to their comments, Doctor A established a relationship between the habit of looking down and head protrusion. Doctor A said that a pupil in the experimental group (Frank, experimental group 6) was able to look at the keyboard *without leaning on it*. The Alexander teacher also emphasised the relationship between head-eyes and the alignment of the spine, saying that another pupil in the experimental group (Alan - experimental group 1) was able to look down *without collapsing his neck* when playing the piano. Finally Doctor B called attention to the importance of sitting correctly at the instrument, *looking forward*.

It may be concluded that the Alexander Technique helped these pupils to improve their habitual patterns of misuse and re-align their primary control, through the practical principles of inhibition and direction. But evident beneficial changes also happened to three pupils in the control group, as we shall see below.

5.1.4 Evident beneficial physical changes in three pupils in the control group

Adam (control group 1), Colin (control group 2), and Dora (control group 3).

5.1.4.1 Adam, control group 1 - CD Rom 1, picture 5.5, table 5.6

Adam showed a 'flabby' posture in the pre-test. He had scoliosis, a cervical and dorsal kyphosis, as if his vertebrae were very near each other. Adam was compressing the posterior part of his neck and had a posterior rotation of his head, so that his head was inclined to one side. He had a slouched sitting position, which made him lose contact with the keyboard and have bad support of his feet on the floor. He usually put his feet under the seat. Besides, Adam was making excessive movements when playing the piano. But overall, he was considered to be relaxed.

(a) Pre-test (b) Post-test

Picture 5.5: Adam (control group 1) - Pre-and post-tests pictures.

Table 5.6 Evident beneficial physical changes - summary of pupils in the control group

	Initial physical conditions		Physical changes
Adam control group 1	**1. Postural problems** -	*Doctors A, B, C Alexander B, C musicians D, E teacher A, C, D researcher* →	Improved posture - *Doctors A, B, C Alexander A, D musicians teachers A, C, D*
	2. Slight tension -	*Doctor C researcher* →	Increased release - *teachers A, B*
	3. Lack of grounding -	*teachers A, D researcher* →	Improvement in grounding - *musician D*
	4. Excessive movement -	*Doctor A* →	Decreased movement - *Doctor A*

5.1.4.2 Colin, control group 2 - CD Rom 1, picture 5.6, table 5.7

Colin's head was dropping forwards and he elevated his shoulders in the pre-test performance. He did not have a good connection between his back, arms and hands, and was pulling his chest down.

(a) Pre-test (b) Post-test

Picture 5.6: Adam (control group 1) - Pre-and post-tests pictures.

Table 5.7 Evident beneficial physical changes - summary of pupils in the control group

	Initial physical conditions	Physical changes
Colin control group 2	**1. Postural problems** - *Doctor A* *Alexander A*	Improved posture - *Doctors B, C* *Alexander A, B, C, D* *musicians E* *teachers C, D*
	2. Some tension - *Doctor B*	Decreased tension - *Doctor B* - More economy of movement - *Alexander B, C* - Better finger coordination - *Doctor B* *musician D*

5.1.4.3 Dora, control group 3 - CD Rom, picture 5.7, table 5.8

Dora presented problematic postural features in the pre-test performance. Firstly, the seat was too high for her. She put the weight of her body forwards, leaning towards the keyboard, and was crossing her feet under the seat, without being supported by her sitting bones; this makes a lumbar hiper-lordosis. As Alexander panel member C said:

> She wanted to be good, sitting up properly, stiffening up.

Musician C commented:

> She was breaking in the middle, as if she were in two.

Some observers also found that Dora was tense. She had tension in her legs, feet, neck, chest, and arms; besides, she was pushing her elbows backwards Dora's wrists were too high, so the energy could not go through her arms to her fingers.

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(a) Pre-test (b) Post-test

Picture 5.7: Dora (control group 3) - Pre-and post-tests pictures.

Table 5.8 Evident beneficial physical changes - summary of pupils in the control group

	Initial physical conditions	Physical changes
Dora control group 3	**1. Postural problems** - *Doctors A, B, C* *Alexander A, C, D* *musicians B, C* *teachers C, F* *researcher*	→ Improved posture - *Doctors A, B, C* *Alexander A, B, C, D* *musicians E* *teachers C, D*
	- Bad sitting position - *Doctor A* *teachers D, F*	→ Improved sitting position - *teachers A, B C, F*
	- Bad hand position - *musician B* *researcher*	
	2. Excessive tension - *Doctor A* *Alexander A* *musician A, B, E* *teacher A, C* *researcher*	
	3. Lack of grounding - *Doctor B* *musician C* *teacher C* *researcher*	→ Improved grounding - *Doctors B, C* *Alexander A, B, C, D* *musicians A, C, E* *teachers A, B, C, F*

5.1.5 Evidence of physical change in three pupils in the control group

These three pupils of the control group were physically different in their post-test performances. Adam (control group 1) had an obvious improvement in the axis of the head, and consequent improvement in the angle of the head in relation to the trunk. He seemed to be more aligned and elongated. Adam also reduced his excessive movements and was more grounded and more released in the post-test, although he was considered to be a relaxed pupil from the beginning. Colin (control group 2) also showed an improved posture. His shoulders were lower, he was moving less, his finger movements were more fluent, and he was wasting less energy whilst playing. He also had better hand coordination. Alexander panel member A stated:

> …what was fascinating was to see the change between a body that was trying to get a connection between his arms and hands [pre-test], and then to see the connection between his hand, arms and back [in the post-test]. Quite lovely! …The head is nicely back and 'up' [post-test], his back is going up wonderfully.

Colin (control group 2) did not have his feet on the floor in both pre-and post-tests. The Doctors put it like this:

> *Doctor B* - This one…his feet will not be able to touch the pedals. He will need to move forward, to sit forward in order to take the pedals. His feet are not on the floor because the seat is too high for him.
>
> *Doctor C* - But if the seat were lower, his arms would be high in relation to the keyboard.

Finally, many observers noticed Dora's (control group 3) postural improvement. Her lordosis disappeared. She was well aligned and sitting well, and her feet were not crossed under the seat any more. She had her feet on the floor, her shoulders were more opened, and she gave the impression of having grown in stature. Alexander

panel member B offers a typical example of the comments on Dora's post-test performance:

> She was more controlled, I mean, more balanced, less waste of energy, ...less waste of movement. The touch is very different. Somehow the body weight is more equal, it's more balanced, it's more uniform. She seems to be more on the chair. Grounded.

Interestingly, some observers' argument was that the physical changes showed by these three pupils of the control group were not so evident as the ones shown by Alan (experimental group 1). For instance, Adam's (control group 1) piano teacher found that, in both pre-and post-test performance,

> ...he is too flabby and seems to be relaxed, but inside there is an enormous tension. This is because he is leaving his mental side apart. He is in conflict, because he is expected to be faster in mental terms, and he is not. He is mentally lazy, and he apologises because he did not understand something (Teacher A).

Teachers D and F did not notice a huge postural difference in Dora's (control group 3) physical condition in her post-test-performance:

> *Teacher D* - I think she was sitting too near the piano in the first performance [pre-test]. So naturally she was pushing her arms back [she illustrates]. In the second performance she moved away from the piano, but she did not have that support, from the back, feet on the floor, pelvic area supported by the chair. I did not see great...postural differences. The biggest difference was her position in relation to the piano.

> *Teacher F* - In the [pre-test] I observed that the distance from the piano was different and the wrists were different. In the [post-test] I could not observe these differences. The wrists continue high. I have the impression that she needed to be so near the piano [pre-test] because she did not have intimacy with the music and she needed to feel safe; so she was holding the instrument much more in the pre-test.

5.1.6 Possible reasons for the evident beneficial physical changes shown by the pupils in the control group

As explained in Chapter 4, soon before the post-test recording the researcher asked these three pupils in the control group to sit in a relaxed way, and immediately after to sit in a good position to play the piano. It seems that Adam, Colin, and Dora were able to do this promptly. As the notes made by their piano teachers and the researcher on the teachers' observation forms show, they tended to oscillate between the use of better and worse posture in the piano lessons, but probably they did not have an overall 'bad use', in Alexander's terms.

For instance, *Adam (control group 1)* seemed to be very relaxed and flexible (researcher - baseline period and all piano lessons) and was able to improve his posture when playing the instrument or when requested to do so by his piano teacher. Piano teacher A (baseline period, piano lesson 2) wrote that his body posture was 'down', and that he showed little disposition to keep his spine erect. But she also found that Adam's level of tension was excellent (all piano lessons). In her notes, teacher A indicates that Adam was lazy in learning the musical pieces, which may explain why he tended to 'give up' his good posture; but his motivation to play was excellent. Teacher A also makes clear that, from the sixth piano lesson on, Adam's sitting position improved. Perhaps his physical disposition was directly associated with his motivation for playing. If so, the better he knew the musical pieces he was learning, the better was his physical disposition and posture.

Colin (control group 2) and *Dora (control group 3)* are similar cases. From the beginning, they presented some tendency to collapse, but still had a natural good posture. Colin was not tense (researcher, teacher B - baseline period and piano lessons). In the pre-test performance, Colin was sitting badly and had very little support on his feet. In the post-test performance, he improved his sitting position and had more support for his feet, especially because the researcher asked him to do so, as

mentioned before. Dora, on the other hand, had specific patterns of tension (researcher - piano lessons 2, 3, 6, 7). Dora's hands were always tense, probably due to bad hand position (researcher - baseline period and all piano lessons). Perhaps her bodily tension and bad posture in the pre-test performance were caused by her bad sitting position, as Teachers D and F claimed above. But overall, the researcher (baseline period and piano lessons 1,2,3,7,8) and piano teacher C (piano lessons 1, 2, 3, 8) considered that Dora had a good posture.

It is plausible to suggest that the postural problems presented by these three pupils in the control group - Adam, Colin, and Dora - were minor ones. Oscillations between better and worse posture are possible to find in all human beings, including the two experimental group pupils who presented evident beneficial physical changes (Alan, experimental group 1 and Bob, experimental group 4), as previously discussed. But there is an important point to raise here: in Alexander's terms, this oscillation represents a habit; these pupils tended to oscillate excessively and many times were 'using themselves' in a harmful way, with trunk compensations and excessive tension. But at that early stage of life, these problems are only functional. For instance, Dora's lordosis could become structured in her body later, if she continues using herself in this way. If so, perhaps young piano pupils' physical problems could be avoided or reduced with parents' and teachers' help, if they are conscious of such problems.

Table 5.9 Summary of pupils with evident beneficial physical changes

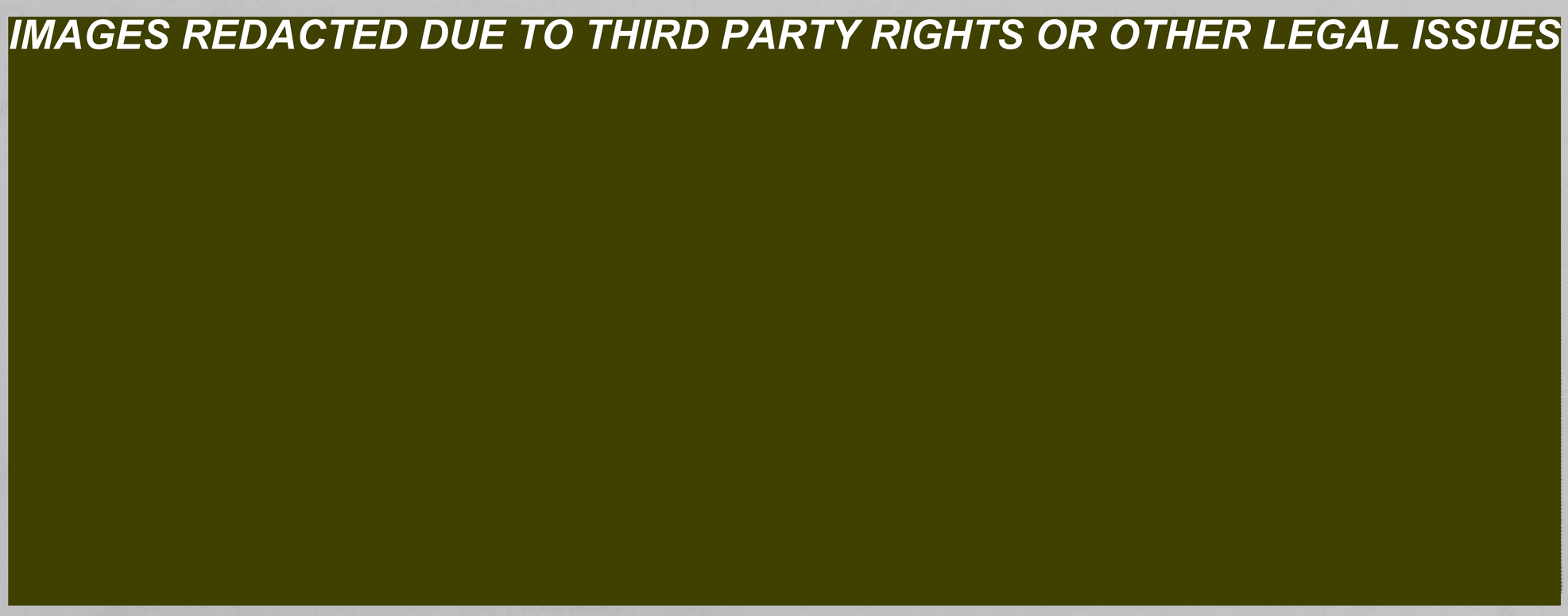
Control Group	Adam (control 1) Colin (control 2) Dora (control 3)
Experimental Group	Alan (experimental 1) Daniel (experimental 3) Bob (experimental 4 Frank (experimental 6)

5.2 Minor beneficial physical changes

The following pupils in the experimental group showed minor beneficial physical changes: Conor (experimental group 2), Jill (experimental group 7), and Hugh (experimental group 10).

5.2.1 Conor, experimental group 2 - CD Rom 1, picture 5.8, table 5.10

Conor showed a slight projection of the head forwards and down, towards the piano, in the pre-test performance. He did not seem to be well grounded on the floor and on the seat. He presented some tension in his hands and legs, and his shoulders were narrowed. Conor had some difficulty in coordinating hand movements, and made more movement to play the instrument than necessary.



(a) Pre-test (b) Post-test

Picture 5.8: Conor (experimental group 2) - Pre-and post-tests pictures.

Table 5.10 Minimal beneficial physical changes - summary of pupils in the experimental group

	Initial physical conditions		Physical changes	
Conor experimental group 2	**1. Postural problems** -	*Doctors A, B Alexander B researcher*	→ Improved posture -	*Doctors A, B Alexander B, C teachers A, B, C, D, E, F researcher*
	- Bad hand position -	*teacher B musician A*		
	- Disconnection between parts of the body -	*Doctor B Alexander teacher*	→ Improved coordination -	*Alexander teacher*
	2. Excessive tension -	*Doctors A, B Alexander A musician A, B Alexander teacher*	→ Decreased tension -	*Doctor A Alexander A Alexander teacher*
	3. Lack of grounding -	*researcher*		
	4. Excessive movement -	*Doctor A*		

5.2.2 Jill, experimental group 7 - CD Rom 2, picture 5.9, table 5.11

Overall, in the pre-test, Jill's natural good posture was recognised by the observers. Alexander panel member A said:

> She's got a lovely "use".

And Doctor A:

> She is much better physically organised than the boys. And she has more direction. It is a whole body. She has much more direction, her trunk is one entire unit. She was better in the post-test, but there was not a huge difference.

Some observers claimed that Jill was sitting well; she was not so near the keyboard as many other pupils. Jill had her feet on the floor and was able to move her arms freely However, in the pre-test performance, Jill was 'pulling her back in'. This corresponds to a lumbar lodosis, in which there is a tendency to bring the body weight forwards in relation to the sitting bones.

(a) Pre-test (b) Post-test

Picture 5.9: Jill (experimental group 7) - Pre-and post-tests pictures.

Table 5.11 Minimal beneficial physical changes - summary of pupils in the experimental group

	Initial physical conditions		Physical changes	
Jill experimental group 7	**1. Postural problems** -	*Doctor B Alexander D teacher F Alexander teacher researcher*	→ Improved posture -	*Doctor B Alexander D teachers C, D researcher*
	2. Slight tension (neck) -	*Alexander teacher*	→ Decreased tension -	*Alexander A, B Alexander teacher*
	3. Lack of grounding -	*Alexander teacher researcher*	→ Improved grounding -	*Doctor B Alexander D Alexander teacher researcher*

5.2.3 Hugh, experimental group 10 - CD Rom 2, picture 5.10, table 5.12

Hugh was a very active boy, moving his legs and body too much in the Alexander lessons. He told the Alexander teacher that it was difficult for him to keep still. He presented strong patterns of tension in his body, especially in his shoulders, arms and hip joints. Hugh had difficulty in releasing his neck so that his head would go 'up'. His head was usually inclined forwards and down, as if it were going to fall down on the keyboard. This promoted a collapse of his trunk forwards, and a slight kiphosis. Hugh was also 'pulling himself down' at the beginning of each musical phrase. He was not well grounded on the floor and had some motor difficulties. Besides, to play the piano, he was moving his whole body, especially the lower back and the legs when changing the pedals.

Table 5.12 Minimal beneficial physical changes - summary of pupils in the experimental group

	Initial physical conditions	Physical changes
Hugh experimental group 10	**1. Postural problems** - *Doctors A, C, Alexander A, Alexander teacher, researcher* →	Improved posture - *Doctors B, Alexander A, B, C, D, teachers A, B, C, D, E, F*
	- Bad sitting position - *Doctor C, musicians A, B*	
	- Disconnection between parts of the body - *Alexander B, C, D, musician A*	
	2. Excessive tension - *Doctors A, B, C, Alexander A, B, musicians B, D, E, Alexander teacher* →	Some decrease in tension - *Alexander B*
	3. Lack of grounding - *Doctor A, Alexander teacher, researcher* →	Improved grounding - *Alexander B, musicians D, E, teacher B*
	4. Excessive movements - *Doctors A, B, C, Alexander B, C, D, Alexander teacher, researcher*	

(a) Pre-test (b) Post-test

Picture 5.10: Hugh (experimental group 10) - Pre-and post-tests pictures.

5.2.4 Evidence of minor physical changes in three pupils in the experimental group

In the post-test performances, these three pupils of the experimental group - Conor, Jill, and Hugh - showed minor beneficial physical changes, according to many observers. Conor (experimental group 2) had an improvement of his axis (head-neck-back relationship); his head was 'more up'. Conor's hand tension decreased, his shoulders were more opened, and his movements were more flexible. Some observers did not see a huge difference in Conor's physical posture in the post-test, and he did not show any improvement in the coordination movements. Jill (experimental group 7) seemed to be more relaxed and grounded on the seat, and her tendency to lordosis was reduced. Hugh (experimental group 10) was sitting much better, his neck was not falling down, and his spine was more aligned in the post-test. He was not 'pulling down' so much at the beginning of each musical phrase. His shoulders widened and he was more grounded. Perhaps Hugh was too grounded and still too tense in the post-test, giving the impression of heaviness. The musicians panel's dialogue exemplifies this point:

D - He is really grounded. His fingers were so grounded, he could not move them up. Too grounded. His body was all grounded, too heavy.

E - Yes.

D - He was too grounded. I think it is more disturbing when some pupils are too light than when they are too grounded. I think it is easier to moderate this grounding than learning how to ground.

E - But if he needs to play a piece which is very light he will not make it. I don't know if his grounding is intentional or if it is the result of his tension. The result is positive for some musical styles. But I think this result is more because of tension than awareness, or because of musical consciousness.

Additionally, Hugh's excessive leg movements and tension were obvious in the post-test performance, as the doctors illustrate:

C - What is this movement? He moves his entire body when using the pedals.

B - This is an associated reaction. The left leg moves, following the movements that the right leg is making to change the pedal. This happens because of tension.

5.2.5 Possible reasons why some pupils in the experimental group presented minor beneficial physical changes

The same reasons that led pupils in the experimental group to show evident beneficial physical changes would explain why minimal beneficial physical changes occurred to these three pupils in the experimental group - Conor, Jill, and Hugh, if they can be attributed to the Alexander Technique. As has been already argued in the previous section, such changes may have happened because these pupils experienced the principles of inhibition and direction, and consequently started changing their habitual harmful patterns of use, releasing excessive tension, and guiding themselves into a

more balanced use their primary control. Conor (experimental group 2) presented some physical imbalances, but not as much as many other pupils, and his improvements were subtle. More discussion on Conor's situation will come in the next two chapters, as he became a special case in this study for specific reasons. Jill did not present strong patterns of misuse from the beginning. Perhaps she only needed to become more grounded and stop 'pulling in' her pelvis, so that she was able to avoid the lumbar lordosis, thus achieving physical improvements in the post-test. Hugh would certainly need more time to show more evident physical changes, as he would need to overcome his strong patterns of tension in order to direct himself 'up'. As Carrington stated (quoted in Chapter 2), direction, which involves 'lengthening and widening' of the organism, entails the release and expansion of muscles which were previously compressed. Thus breaking the barrier of excessive tension is the first task for the Alexander practitioner to work on.

It is worth quoting the pupils' comments to the Alexander teacher on their experiences with the Technique during the Alexander lessons, as follows:

Conor (experimental group 2) told me that he remembered to put his body into balance and to release the shoulders in order to play the piano (Alexander lesson 7). He told me that he has learned that posture is a position that gives you balance (Alexander lesson 9).

Jill (experimental group 7) told me that now she is able to notice when other people are collapsed. This helps her to remember to look after her own body. She also told me that it is easier to remember her posture when doing other activities, and that she tries not to let her head go down when looking at the keyboard (Alexander lesson 9).

Hugh (experimental group 10) told me that he lies down in a semi-supine position at home, when he notices that his arms and legs are tense (Alexander lesson 3). He told me that he felt his hands and shoulders more released when playing the piano (Alexander lesson 4).

Table 5.13 Summary of pupils with minor beneficial physical changes

Experimental Group	
	Conor (experimental 2)
	Jill (experimental 7)
	Hugh (experimental 10)

5.3 No evident physical changes

Two pupils in the experimental group, Ella (experimental group 5), and Ivy (experimental group 8) did not have evident physical changes. Five pupils in the control group did not show evident physical changes either: Ed (control group 5), Flora (control group 6), Joe (control group 7), Iris (control group 8), and Henry (control group 10).

5.3.1 No evident physical changes in two pupils in the experimental group

Ella (experimental group 5) and Ivy (experimental group 8)

5.3.1.1 Ella, experimental group 5 - CD Rom 1, picture 5.11, table 5.14

The observers indicated Ella's physical qualities in the pre-test performance: she had a great physical posture for executing everything on the piano. She was sitting well and did not make any excessive movements when playing. Ella had a loose body in

general, with, however, some tension in the hip joints, legs, and shoulders. She had difficulty in releasing her neck and allowing her head to go 'up' in the Alexander lessons. On the chair, Ella had some difficulty in inclining her trunk forwards from her hip joints. The segments of her body were a little disconnected from each other.

Doctor A highlighted an interesting point:

> It is very interesting how the habit of looking down is related to head protrusion. She [Ella] looks down, so the entire body goes down. This situation is intensified during the performance. Beside, her thighs are tense.

(a) Pre-test (b) Post-test

Picture 5.11: Ella (experimental group 5) - Pre-and post-tests pictures.

Table 5.14 No evident physical changes - summary of pupils in the experimental group

	Initial physical conditions		Physical changes	
Ella experimental group 5	**1. Postural problems** - Bad hand position	*Doctor A, Alexander A, researcher*	→ Slightly improved posture	*Doctor A, Alexander teacher*
	- Disconnection between parts of the body	*Alexander teacher*	→ Improved coordination	*Alexander teacher*
	2. Some tension	*Alexander A, Alexander teacher*	→ Decreased tension	*Alexander teacher*
	3. Lack of grounding	*Alexander teacher*	→ Improved grounding	*Alexander A*

5.3.1.2 Ivy, experimental group 8, CD Rom 2, picture 5.12, table 5.15

Ivy presented a lack of muscular tonus; the segments of her body seemed disconnected. Her posterior neck region was tense, as well as her shoulders, and arms. She had the habit of drawing in her toes. Her breathing was too restricted. In the pre-test performance, she was sitting on her sacrum, inclining her trunk backwards. She projected her head forwards, which brings tension to the hip joints. Ivy was 'pulling down'. Besides, she did not support her feet on the floor and was not well supported by the seat. She tended to move her lips whilst playing and presented bad pedal coordination. Musicians B and C, however, highlighted Ivy's important physical quality:

> *C* - She has released wrists.
>
> *B* - Yes, it is very nice to see her wrists. Only few children have relaxed wrists; this is something that I've been noticing. Many pupils are preparing the hands and fingers too much. They move around the keyboard with fixed hands, they don't relax.

(a) Pre-test (b) Post-test

Picture 5.12: Ivy (experimental group 8) - Pre-and post-tests pictures.

Table 5.15 No evident physical changes - summary of pupils in the control group

	Initial physical conditions		Physical changes
Ivy experimental group 8	**1. Postural problems** - *Doctors A, B* *Alexander A* *teachers A, B, C, D, E, F*	→	Slight improvement - *Alexander B, D* *teachers C, D, E, F* *musicians C, D*
	- Bad sitting position - *Doctors A, B,*		
	- Disconnection between parts of the body - *teacher D* *Alexander teacher*		
	2. Tension - *Doctors A* *Alexander B* *musician C* *teacher D* *Alexander teacher*	→	Decreased tension - *musician C*
	- Restricted breathing - *Alexander teacher*		
	3. Lack of grounding - *Doctors A, B* *Alexander B* *teacher D* *researcher*	→	Improved grounding - *Doctor A*
	4. Excessive movement - *researcher*		

5.3.2 No evidence of physical changes in two pupils in the experimental group

Overall, the observers did not notice major physical changes in both Ella's (experimental group 5) and Ivy's (experimental group 8) post-test performances. In the Alexander lessons, they presented some physical improvements. Ella was able to release excessive tension, especially in her legs. But her neck and shoulders were still tense in the last Alexander lesson. She also became more grounded and improved her motor coordination. Some observers also noticed that Ella's downward pull was reduced, and the axis of her head was coinciding with the axis of her trunk. The notes made by piano teacher D and the researcher supported the impression that Ella had some physical improvement: she seemed to be more released and grounded in the post-test performance.

The majority of observers found that, in the post-test, Ivy persisted with the same posture. There was not a huge difference in the head-neck relationship. She continued moving her lips excessively. In the Alexander lessons, Ivy still presented strong patterns of tension. However, to some observers, Ivy seemed more grounded, more centred, and relaxed in the post-test performance.

5.3.3 Possible reasons why two pupils in the experimental group did not present physical changes

From the outset, Ella (experimental group 5) presented a reasonable posture and no excessive tension, according to many observers. Ella presented some specific and subtle physical problems, and had subtle physical changes. Perhaps she was not responsive to the Alexander Technique and to the piano lessons because, as will be seen in the next two chapters, she did not show evident changes in the other two aspects either (attitude and performance). Or perhaps she experienced physical changes, not visible to the majority of the observers, but only to herself and to the Alexander teacher, who had physical contact with the pupil ('hands on'), and to her piano teacher and the researcher, who had a direct contact with her during the experiment. According to the Alexander teacher, she became more released and flexible, especially in the hip joints; she also became more grounded (Alexander lessons 8 and 9). Ella told the Alexander teacher that, during the week, she felt more relaxed (Alexander lesson 2); she could remember to 'expand' her chest and the rest of her body (Alexander lesson 4); and she had the impression that her body was much lighter (Alexander lesson 5). Ella wrote (questionnaire 2) that, in the Alexander lessons, she was able to release her shoulders, neck (anterior and posterior), legs, hip joints, and feet.

Ivy (experimental group 8) did not present visible physical changes to the majority of observers, but the Alexander teacher noticed some important physical improvements: better overall release and improvement in feet support, especially because Ivy was able to stop her habit of drawing in her toes (Alexander lesson 8). Additionally, Ivy's

shoulders changed considerably (Alexander lesson 9). Ivy (questionnaire 2) confirmed the Alexander teacher's impression, as she wrote: 'I release my body much more, and my arms can move better, the head, and my entire body'. Nonetheless, the most important changes experienced by Ivy refer to attitude and performance, and will be examined in the next chapters.

Different people react to the same stimuli in different ways. The Alexander Technique was a new stimulus to Ella and Ivy, and they did not respond to it as one would expect. As 'end-gainers', we educators would like to see quick and obvious improvements in our pupils, without considering that children, and especially adolescents like Ella and Ivy, are experiencing many changes and challenges in their lives. As a method of re-education of harmful habits of use of the psycho-physical self, the Alexander Technique may require more time for effective changes to become evident. These two pupils did not present obvious physical improvements during the short period in which they had Alexander lessons. But perhaps, the pupils themselves felt that some significant changes occurred for their personal lives and for their piano learning and playing due to the Alexander lessons.

5.3.4 No evident physical changes in five pupils in the control group

Ed (control group 5), Flora (control group 6), Joe (control group 7), Iris (control group 8), and Henry (control group 10).

5.3.4.1 Ed, control group 5 - CD Rom 1, picture 5.13, table 5.16

The observers noticed some of the physical features presented by Ed in the pre-test. His head was projected forward and down. His trunk and head were not aligned and he presented a kyphosis. His elbows were narrowed because of the kyphosis. Ed seemed to be heavy in both performances and also slightly tense. Additionally, he was

sitting in a slouched position. Quotations from two observers illustrate Ed's postural problems:

> *Doctor A* - The axis of his head almost in the middle of his thighs. The pupil had a serious kyphosis, with the trunk inclined forwards. This kind of chronic posture may lead to an irreversible spine degeneration.
>
> *Alexander panel member A* - He was out of balance, as his pelvis was not underneath the spine, and he was pulling his chest down and pushing his body backwards, just as if somebody was kicking him in the stomach.

(a) Pre-test (b) Post-test

Picture 5.13: Ed (control group 5) - Pre-and post-tests pictures.

Table 5.16 No evident physical changes - summary of pupils in the control group

	Initial physical conditions		Physical changes
Ed control group 5	**1. Postural problems** -	*Doctors A, B, C Alexander A, B teacher D researcher*	
	- Bad sitting position -	*musicians A, B teacher F researcher*	→ Slightly improved sitting position - *teachers C, F*
	2. Slight tension -	*Alexander B*	

5.3.4.2 Flora, control 6 - CD Rom 1, picture 5.14, table 5.17

Flora showed a projection of the head forward, which interferes with the alignment of her head, neck, and trunk and head in the pre-test performance. She was 'pulling down' in the front and was considered to have a 'fixed' posture; lack of contact with the keyboard; lack of connection between fingers and arms; and lack of flexibility in the arms and wrists. Flora's fingers were too extended during performance, leading to excessive effort and finger articulation. Besides, her elbows were too low, and she was making excessive movements with her forearms, making a 'to and fro' movement whilst playing.

Table 5.17 No evident physical changes - summary of pupils in the control group

	Initial physical conditions		Physical changes
Flora experimental group 6	**1. Postural problems** -	*Doctor A Alexander A musicians A B, C teacher D researcher*	
	- Bad sitting position -	*musicians A, B researcher*	
	- Bad hand position -	*Doctor B Alexander A musicians A, E researcher*	→ Slightly improved hand position - *musician A*
	- Lack of contact with the keyboard -	*musicians B, D, E*	
	- Disconnection between parts of the body -	*Doctor B Alexander A*	→ Slightly improved coordination - *Alexander A*
	2. Excessive tension -	*musicians A, B, D*	→ Slightly decreased tension - *Doctor B Alexander A*
	3. Excessive effort -	*Doctor B musicians A, D, E*	
	4. Excessive movement -	*musician D researcher*	

(a) Pre-test (b) Post-test

Picture 5.14: Flora (control group 6) - Pre-and post-tests pictures.

5.3.4.3 Joe, control group 7- CR Rom 2, picture 5.15, table 5.18

In the pre-test, Joe was in a slouched position, presenting kyphosis and head retraction. He was 'pulling down' and had a 'flabby' posture. He seemed to be a tense child, with tense feet and thighs, fixed shoulders and arms. Joe also presented the so-called 'parasite movements', which means that he was making unnecessary movements whilst playing.

(a) Pre-test (b) Post-test

Picture 5.15: Joe (control group 7) - Pre-and post-tests pictures.

Table 5.18 No evident physical changes - summary of pupils in the control group

	Initial physical conditions		Physical changes
Joe control group 7	**1. Postural problems** -	*Doctors A, B* *Alexander A, D* *teachers D, F* *researcher*	→ Slightly improved posture - *Alexander B, D* *musicians C, D* - Postural deterioration - *musician E*
	- Bad sitting position -	*musicians A, B* *teacher F* *researcher*	
	2. Excessive tension -	*Doctors A, B* *Alexander A, B* *musician C*	
	3. Excessive movement -	*Doctor A* *Alexander A* *researcher*	

5.3.4.4 Iris, control group 8 - CD Rom 2, picture 5.16, table 5.19

Watching Iris's pre-test, Doctor A said:

> This girl has a lordosis. She projects her belly and head forwards. This girl rotates her head to one side; her feet are turned in; there is tension in her thighs. This is a compensation for the lumbar tension; it is similar to people who cross their legs under the seat.

Iris was also flexing her trunk without inclining the trunk from the hip joints, but from the lumbar area; this may cause a lumbar kyphosis. She had a collapsed chest and there was a disconnection between her trunk and chest. She was tightening the upper trunk, pelvis, and knees, holding her breath, and moving too much during performance. 'This is a very tight little lady', said Alexander panel member A. Concerning Iris's motor coordination, sometimes she could not play both hands together, as one hand was moving faster that the other.

(a) Pre-test (b) Post-test

Picture 5.16: Iris (control group 8) - Pre-and post-tests pictures.

Table 5.19 No evident physical changes - summary of pupils in the control group

	Initial physical conditions		Physical changes
Iris control group 8	**1. Postural problems** -	*Doctors A, B Alexander A musician C researcher*	→ Slightly improved - *Alexander D* posture
	- Disconnection between parts of the body -	*musicians A, C*	
	2. Some tension -	*Alexander A*	→ Increased tension - *musician D* - Decreased tension - *Alexander B*

5.3.4.5 Henry, control group 10 - CD Rom 2, picture 5.17, table 5. 20

Henry was sitting in a slouched position and presented lordosis and kyphosis in the pre-test performance. He kept his feet crossed under the seat to compensate for his lordosis. Henry's cervical region was really tense and his trunk was elevated. He had a head flexion, pressing his chin down, and had no support for his feet on the ground. As Alexander panel member A said:

> He was not committed to being on the floor. And if you are not committed to being on the floor, how are you going to let the whole skeleton lift you? You need to have a foundation!

Henry was also considered to be very tense. Some observers were impressed because he was able to play with such a high level of tension, fixing his hands and fingers, and making a massive physical effort to play. Perhaps because of his tension, he had motor coordination difficulties. Alexander panel member C said that 'he could not raise his hands sufficiently to articulate the repetitions'. And Doctor A made an interesting comment:

> It is impressive how a child can be so tense. We are living in a tense historical period, because for him to get to this state of tension, he had to be devastated by life.

Table 5.20 No evident physical changes - summary of pupils in the control group

	Initial physical conditions	Physical changes
Henry control group 10	**1. Postural problems** - *Doctors A, B* *Alexander A* *musicians A, B, C* *teacher D* *researcher* - Bad hand position - *researcher* - Disconnection between parts of the body - *Alexander C* *musicians D, E* **2. Excessive tension** - *Doctor A* *musician C* *researcher* **3. Lack of grounding** - *Doctors A, B, C* *Alexander A* *researcher* **4. Excessive movement** - *researcher*	None

(a) Pre-test (b) Post-test

Picture 5.17: Henry (control group 10) - Pre-and post-tests pictures.

5.3.5 No evidence of physical changes in five pupils in the control group

Overall, the observers saw no evident changes in these five pupils in the control group, Ed, Flora, Joe, Iris, and Henry, in the post-test performances. A few observers pointed out slight improvement in pupils' posture and sitting position. For instance, Ed (control group 5) and Joe (control group 7), had their feet more supported on the floor in the post-test. But for one observer, Joe's posture was worse in the post-test performance, because he was too near the piano, playing with fixed arms. Flora's (control group 6) fingers seemed to be slightly more connected to her back; her neck was slightly less tense; and her wrists better aligned with the upper arm ('less down'). Iris's (control group 8) elbows seemed to be even more fixed in the post-test; she lost freedom of movement. On the other hand, some observers found that that she was slightly freer and more 'opened'. For instance, Alexander panel member D said:

> Her "physical attitude" was slightly better, because she felt more confident with the piece.

Henry (control group 10) did not show significant changes in posture, level of tension, and motor coordination in the post-test. However, Alexander panel member A stated that, if she could 'put hands on him',

> …it would be easy to get him grounded, because he had a good head balance and he did not have a "bad use" all the way through his performances.

As suggested above, the changes showed by these five pupils in the control group were very slight, and not recognised by many observers. The observers' assessments were coherent with the physical features that the pupils showed throughout the entire experiment, according to the researcher's notes.

Table 5.21 Summary of pupils with no evident physical changes

Control Group	Experimental Group
Ed (control 5) Flora (control 6) Joe (control 7) Iris (control 8) Henry (control 10)	Ella (experimental 5) Ivy (experimental 8)

5.4 Worsening in the physical aspect

According to the observers, two pupils in the control group presented worse physical conditions in the post-test performance: Ben (control group 4) and Greg (control group 9).

5.4.1 Worsening in the physical aspect in two pupils in the control group

5.4.1.1 Ben, control group 4 - CD Rom picture 5.18, table 5.22

Overall, the observers highlighted Ben's good posture and hand position. He seemed to be a relaxed person, with good, fluid, and circular wrist and arm movements. His hands could make alternate and fluent movements on the keyboard, and he could prepare for the next movement well. He also had very good motor coordination. However, some observers indicated some postural problems that Ben had in the pre-test. He tended to be slightly flattened; he was not sitting on his sitting bones, but on his sacrum. Ben also presented a neck retraction, and the axis of his head was projected forwards in relation to the axis of his trunk. He had some tension in his chin and neck muscles and was making the so-called 'parasite movements' with his chin and mouth. Alexander panel member A offers an interesting comment on Ben's physical condition in the pre-test performance:

> He is really integrated. But it seems that he is trying to take the impulse [to play] from the shoulders…he is used to expressing emotions through the shoulders. There is a sort of contraction in his front. That could be freed very easily, because basically he wants to be upright.

(a) Pre-test (b) Post-test

Picture 5.18: Ben (control group 4) - Pre-and post-tests pictures.

Table 5.22 Worsening in the physical aspect - summary of pupils in the control group

	Initial physical conditions	Physical changes
Ben control group 4	**1. Postural problems** - *Doctors A, B*	Slight improved posture - *Doctor B*
	- Bad sitting position - *Doctor a*	
	- Slightly bad hand position - *musician D researcher*	
	2. Slight tension - *Doctors A Alexander A musician D researcher*	Increased tension - *Doctors B, C musicians A, B, C*
	3. Lack of grounding - *researcher*	
	4. Excessive movement - *Doctor A Alexander A*	Slightly decreased movement - *Doctor A*

5.4.1.2 Greg, control group 9 - CD Rom 2, picture 5.19, table 5.23

Greg showed his head projected forwards and kyphosis in the pre-test. He did not seem to be well grounded on the floor and had some disconnections between his hands. He was too far away from the piano and had more energy within himself, that he could bring out in his playing. Nevertheless, Greg was not a tense boy, as he had relaxed hands and arms, and he was not wasting movements.

(a) Pre-test (b) Post-test

Picture 5.19: Greg (control group 9) - Pre-and post-tests pictures.

Table 5.23 Worsening in the physical aspect - summary of pupils in the control group

	Initial physical conditions	Physical changes
Greg control group 9	**1. Postural problems** - *Doctors A, B, C, Alexander A, musician A, teacher, researcher*	Postural deterioration - *Doctors A, B, musicians A, d*
	- Bad hand position - *researcher*	
	- Bad sitting position - *Alexander D*	
	- Disconnection between parts of the body - *Alexander A*	
	2. Some tension - *teacher D, researcher*	
	3. Lack of grounding - *Doctors B, C, researcher*	
	4. Excessive movement - *researcher*	

5.4.2 Evidence of worsening in the physical aspect in two pupils in the control group

Both Ben (control group 4) and Greg (control group 9) seemed to be in worse physical condition in the post-test. In Greg's post-test performance, his kyphosis and head projection were more noticeable. He had a slouched posture, and was heavier than before. Overall the observers did not notice postural changes in Ben; some found that he continued presenting the same neck tension, and bad alignment between head, neck, and trunk. His sitting position did not alter, as he persisted in sitting on his sacrum. His mouth was calmer, though. Other observers found that Ben presented more tension in the post-test and some motor coordination problems which did not appear before. For instance, the doctors said that:

> *Doctor B* - In the post-test performance he is making more effort to play, isn't he?

Doctor C - In the [post-test] he has brought the left leg a little to the back, and when he is using the pedal with the right leg, he moves all the rest.

Doctor B - He is making a more associative reaction while playing; he is less relaxed. The left leg moves together with the right. This is a little complicated because he tenses muscles that should not be tense. The movement he is doing with the left leg has no function.

5.4.3 Possible reasons why some pupils in the control group presented worsening in the physical aspect

The descriptions offered above show that specific kinds of physical worsening happened to Ben (control group 4), and Greg (control group 9). There was no obvious reason for Ben to present worse posture in the post-test performance. A possible explanation for this and for his increased effort to play the instrument, is the fact that his sitting position was not very good in both pre-and post-tests. Before starting the post-test, he took his shoes off, as they were producing a noise on the pedals. Probably Ben was not comfortable, and this interfered negatively with his post-test performance.

Greg seemed to be physically worse in his post-test performance probably because he simply enhanced the physical characteristics which were already there: head projected forward, kyphosis, and lack of grounding. This situation may suggest that Greg tended to use himself badly, and that he could continue to get physically worse. Although oscillations between better and worse use also happened to other pupils, Greg provides an example that children are especially vulnerable, and may tend to increase bad habits of use, if nothing is done in order to prevent this.

Table 5.24 Summary of pupils with physical worsening

Control Group	
	Ben (control 4)
	Greg (control 9)

5.5 A special case

Glenda presented a curious physical situation, according to the observers. Their opinions were divided in such a way that became impossible to include Glenda in the same categories as the others. She was considered to be a special case.

5.5.1 Glenda, experimental group 9 - CD Rom 2, picture 5.20, table 5.25

Glenda had great facility in releasing her entire body in the Alexander lessons. Although relaxed, she was not well grounded and had a small lumbar lordosis. When her eyes looked at the keys, her neck collapsed downwards. She presented some tension in her hand, arms and shoulders, which were raised and pulled together when she was performing.

(a) Pre-test (b) Post-test

Picture 5.20: Glenda (experimental group 9) - Pre-and post-tests pictures.

When the observers looked at Glenda's post-test performance, some found that she got worse in the physical aspect, whilst others found that she had major improvements. Although Glenda reduced her lordosis, she elevated her shoulders and wrists and fixed their movements. The observers offered comments such as:

> Interesting, she is far from the piano. It seems that she is forcing something. She is trying to show something. In certain aspects she is worse. My impression is that she would like to show that she is sitting well (Doctor A).

However, all the Alexander panel members and the Alexander teacher found that Glenda had great improvements in the post-test: she was much more connected and grounded, and her coordination improved. Typical comments by the Alexander panel members were:

> Look at that difference! One [pre-test] is all twisted and pulled down and the other one…it is just a huge change! Isn't it amazing? And not having that whole 'pull down' in front, and her legs 'pulled down'. Well done! I think it takes an enormous amount of courage to open like that (Alexander panel member A).

Alexander panel member C especially liked the way that Glenda finished her post-test performance. Pictures of that moment (pre-and post-tests) are presented below, to show Glenda's open chest and shoulders in the post-test.

(a) End of pre-test

(b) End of post-test (c) End of post-test

Picture 5.21: Glenda (experimental group 9) - End of pre-and post-tests pictures.

But the most interesting reaction came from Alexander panel member D, who started crying in the middle of Glenda's post-test performance:

Oh, gosh! It's incredible! [she asked to review the tests] Again, again, again! This is so completely remarkable! God! You wouldn't think you can do much better than that, because she was already very lovely, very good. She is a little bit drowning to it [meaning that in the pre-test, Glenda is leaning towards the piano]. But she is still posed very nicely. But this [comparing the tests] is something other than that. Here she has more back [post-test]. It's to do with this openness here, this being opened and back [opened chest and back]. That's such a big difference, a huge, huge difference. She was ''pulling down'' quite a bit, [pre-test], and now she is up and opened in the front [post-test]. She's opened the front; she's just opened here [she point to the heart]. Oh, fantastic, it's just amazing! Beautiful!

And Alexander panel member D asked: 'Could she achieve that without the Technique?'

Table 5.25 Special case - Glenda (experimental group 9)

	Initial physical conditions		Physical changes
Glenda experimental group 9	1. Postural problems -	*Doctors A, B Alexander teacher researcher*	→ Postural deterioration - *Doctor A* - Slightly improved posture - *Doctors B* - Improved posture - *Alexander A, B, C, D*
	- Slightly bad hand position -	*researcher*	→ Elevated wrists - *Doctors B musicians A, B, C*
	2. Some tension -	*Doctors A, B musicians A, B, C Alexander teacher researcher*	→ Increased tension - *Doctors A, B musicians A, B, C* - Less freedom of movement - *musician E* - Better coordination - *Alexander teacher*
	3. Lack of grounding -	*Alexander teacher*	→ Improvement in grounding - *Alexander teacher*

5.5.2 Possible reasons why Glenda (experimental group 9) presented both worsening and improvement in the physical aspect

Doctor A said that Glenda was 'trying to show that she was sitting well'. Perhaps Glenda was performing a posture, which she probably felt as erect and elegant. If so, she offered to this study a most important example of what the Alexander Technique is not about. It is not about performing postures or positions. As Dewey (in Alexander, 1941: 46) claims, in trying to stand straight, people stand differently for a little while; but this is only 'a different kind of badly'.

On the other hand, it is important to emphasise that the seat was too low in relation to the piano, which was too high for Glenda. She was trying to keep herself in 'mechanical advantage', keeping her feet on the floor, allowing her arms to fall freely from her trunk, and reaching the keys at the same time. Perhaps she adopted high wrists to compensate for the excessive height of the instrument. Besides, she was too near the keyboard in the post-test, so she fixed her elbows near her trunk. If one pays attention to Glenda's back (lumbar area), there is no remote trace of collapse or lordosis, which is something extremely significant. It is also important to review the pictures that impressed the Alexander panel members, in which her chest and shoulder are opened (picture 5.21). Besides, as will be seen in the two next chapters, Glenda showed evident improvements in attitude and performance.

Table 5.26 Special case

Experimental Group	
	Glenda (experimental 9)

5.6 A note on gender

Gender was not an issue for the present study, and the criteria of observation did not suggest that the observers should examine the possible physical or attitudinal differences between girls and boys. Nonetheless, two members of the Alexander panel made comments that are worth quoting here:

> *Alexander Panel B:* It seems that the girls are better poised than the boys, they have a better postural attitude than the boys. The boys don't seem to be so poised, they don't pay much attention to their postural attitude. The second major difference between boys and girls is that there is a huge difference of attitude. All the girls seem to be more composed, more at peace with what they are doing. The boys are not.

> *Alexander Panel C:* In Minas Gerais [Brazilian state where the city of Belo Horizonte is] people are more traditional. Oh yes, the girls have to behave properly, a lot more than in São Paulo. For sure, a lot more than in Rio [São Paulo and Rio de Janeiro, two other Brazilian states].

As no piece of research on the Alexander Technique was found that includes discussion on gender, the comments above, which highlight the psycho-physical differences between males and females within a sociological context, indicate an important topic for future research.

Summary and conclusion

This chapter has presented the observers' comments on the piano pupils' physical problems and changes, and has provided possible explanations why the pupils showed

these changes. The pre-and post-test performances showed that some pupils had evident or at least minimal beneficial changes, some deteriorated, whilst others did not change et al.. A special case occurred, as one pupil of the experimental group seemed to be better in some respects and worse in others. A summary of the overall findings of this chapter is offered in the table below.

Table 5.27 Summary of piano pupils' physical changes

	Evident beneficial physical changes	Minor beneficial physical changes	No evident physical changes	Physical worsening	Special case
Experimental Group	Alan (experimental 1) Daniel (experimental 3) Bob (experimental 4 Frank (experimental 6)	Conor (experimental 2) Jill (experimental 7) Hugh (experimental 10)	Ella (experimental 5) Ivy (experimental 8)	None	Glenda (experimental 9)
Control Group	Adam (control 1) Colin (control 2) Dora (control 3)	None	Ed (control 5) Flora (control 6) Joe (control 7) Iris (control 8) Henry (control 10)	Greg (control 9) Ben (control 4)	None

In Chapter 1, the common pedagogical principles presented by the piano pedagogues showed their concern with posture, sitting and hand position, the cultivation of freedom in piano playing, a conscious sensation of one's movement, and economy of movement and effort. The data presented in this chapter suggest that average piano pupils may present recurrent problem in these areas, which justify the pedagogues' concerns. Exaggerated accentuations of the curves of the spine, such as convex arcs (kyphosis) and concave arcs (lordosis) were common. Bad alignment of the neck with the trunk (neck projections and retractions) was also recurrent. Bad sitting and hand positions, problems in the upper limbs (shoulders, arms, wrists, hands, fingers), as

well as excessive tension, effort, and movement were noticed in many piano pupils. Additionally, lack of grounding of the feet on the floor and of the sitting bones on the seat was frequent. The other problems that appear in some pupils (scoliosis, problems in the lower limbs, specific tension, pain, and coordination problems) were less recurrent, but also significant. There is a central theme underlying all these problems: it was difficult for many of these pupils to keep their balance during performance without creating bodily compensations. More precisely, whilst playing the piano, many pupils were not able to keep upright without some kind of effort.

To present a clearer overall view of the physical problems and improvements that the pupils in both groups had, a second table is offered in the next page (table 5. 28). Firstly, the results presented in this table suggest that some pupils in both groups had improvements in some specific aspects, even if they did not present these specific difficulties. Secondly, it seems that the Alexander Technique had a strong impact in the pupils' organism, helping them to improve their posture and coordination, to decrease their levels of tension and excessive movements, and to improve their grounding.

It must be borne in mind that some of the problems presented by the pupils who participated in the pilot and main studies may be associated with the acquisition of domain-specific abilities, and should be dealt with by piano teachers themselves. Firstly, some observers complained about the inappropriate height of the seats (Doctors A and B, Alexander panel members A, B, C, and D, and researcher). References to this problem appeared throughout the data, relating to four pupils in the control group (members 2, 3, 5, and 9), and seven pupils in the experimental group (members 1, 2, 3, 4, 5, 9, and 10). Secondly, in general the pupils' hands were not functionally well positioned (Doctor A, musicians B and C, and researcher). This means that some pupils used to collapse the knuckles of the hands, which goes against the ideal 'hand attitude' advocated by the pedagogues discussed in Chapter 1.

Table 5.28 Summary of physical changes in the pupils in both groups

Experimental group			Control group
Physical improvements ←	**Initial physical conditions**	→	**Physical improvements**
Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (6) Experimental (7) Experimental (8) Experimental (10)	Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (6) Experimental (7) Experimental (8) Experimental (10)	**Postural problems**	Control (1) Control (2) Control (3) Control (4) Control (5) Control (6) Control (7) Control (8) Control (10)	Control (1) Control (2) Control (3) Control (4) Control (8)
Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (5) Experimental (6) Experimental (9) Experimental (10)	Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (5) Experimental (6) Experimental (8) Experimental (10)	**Disconnection between parts of the body**	Control (1) Control (2) Control (3) Control (6) Control (7) Control (9) Control (10)	Control (1) Control (2) Control (3)
Experimental (1)	Experimental (1)	**Restrict view of the keyboard**	None	None
Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (5) Experimental (6) Experimental (7) Experimental (8) Experimental (10)	Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (5) Experimental (6) Experimental (7) Experimental (8) Experimental (10)	**Excessive or some tension**	Control (1) Control (2) Control (3) Control (4) Control (5) Control (6) Control (7) Control (8) Control (9) Control (10)	Control (1) Control (2) Control (6)
Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (5) Experimental (6) Experimental (7) Experimental (8) Experimental (10)	Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (5) Experimental (6) Experimental (7) Experimental (8) Experimental (10)	**Lack of grounding**	Control (1) Control (2 Control (3) Control (4) Control (9) Control (10)	Control (1) Control (2) Control (3)
Experimental (1)	Experimental (1)	**Excessive effort**	Control (6)	None
Experimental (1) Experimental (3) Experimental (4) Experimental (10)	Experimental (1) Experimental (2) Experimental (3) Experimental (4) Experimental (8) Experimental (10)	**Excessive movements**	Control (1) Control (2) Control (4) Control (6) Control (7) Control (9) Control (10)	Control (1) Control (2) Control (3) Control (4)
Experimental (4)	Experimental (1) Experimental (4)	**Lack of vitality**	Control (4)	None
Experimental (6)	Experimental (6)	**Pain**	None	None

Thirdly, the researcher noticed that, overall, the pupils presented poor technical approaches to the keyboard, perhaps because finger and weight techniques were not being fully developed by pupils in their piano lessons. As the pedagogues argued in Chapter 1, these techniques are basic resources that allow pianists to deal with a diverse repertoire. Besides, some pupils adopted inadequate techniques, which did not help them to obtain the appropriate tone quality required by some specific passages. The researcher observed this problem in two pupils of the control group (members 1 and 5), and four pupils of the experimental group (members 7, 8, 9, and 10). For instance, Bob (experimental group 4) adopts a fall at the beginning of a musical phrase (see CD Rom 1, piece a). This procedure did not help him with starting the phrase, which requires lightness. A similar problem happened with Hugh (experimental group 10), who also started phrases badly, as his body was 'going down' at the beginning of each phrase, as highlighted by Alexander panel member A. Musician B and Doctor C indicated a fourth problem: the development of pupils' coordination was poor. They argued that pupils' coordination needs specific training within the context of music and piano lessons. Bad fingering was another problem also observed in the piano pupils' performances. As shown in Chapter 1, the pedagogues considered good fingering as a fundamental aspect of piano playing.

Probably the majority of piano teachers would not be prepared to deal with many of the physical problems presented by the piano pupils in this study. For instance, the oscillation between better and worse posture happened to pupils in both control and experimental groups. As stated elsewhere in this chapter, at this stage of their lives these imbalances are functional. But if such imbalances prevail, they may turn into a structural and continual physical problem in the future, and even generate the typical disorders presented by musicians, such as the overuse syndrome dealt with in Chapter 3. The problem of excessive tension is a most complex one. Probably, piano teachers will not get good results from just asking pupils to 'relax', if pupils do not know how to stop tensing themselves. In sum, this study suggests that, for the average piano pupil, the acquisition of technical procedures based on the principles advocated by the pedagogues in Chapter 1 - ease of movement, flexibility, and the avoidance of stiffness, excessive movement, and effort - is not simple to attain.

In this light, the Alexander Technique as a method of psycho-physical re-education may help piano pupils to become aware of their physical conditions, and to acquire practical principles which can help them to improve their use and functioning when playing the piano. As Alexander (1923: 2) states, effective improvements in use require that the activity be performed consciously, not habitually. Alexander panel member B said:

> At the end of the day, what musicians need is the freedom of choice. With the Alexander Technique, we are giving ourselves the choice of being an individual, of being coherent with our needs, with our feelings, and choosing to express ourselves in the way we want to express ourselves. And if we are slaves of our habits, we don't have this choice. We want to regain this choice, to be ourselves, and to express the music.

It is important to re-emphasise that the pupils in the experimental group had just nine half-hour Alexander lessons, which represent only an introduction to the Alexander Technique experience. Pupils did not have time to incorporate the Alexander principles, and they probably did not understand what this work is about - stopping doing the wrong things and allowing a better psycho-physical balance to emerge. But as Alexander panel member A stated, the 'pupils' system' captured the Alexander principles. It is impressive how physical changes happened so quickly to some pupils who had major postural unbalances, especially to Alan (experimental group 1), Daniel (experimental group 3), and Bob (experimental group 4). Such improvements could happen in a short period because, to some extent, these pupils became aware of their own bad use and functioning. Alexander panel member B said:

> We want to improve our awareness with the Alexander Technique. Once you start realising that you are an instrument that needs to be played as best as possible, only this idea gives you a different approach to the piano. *It doesn't matter how far on you are with the Technique*;

> improving the way you "use" yourself, your awareness, gives results in your piano playing [my italics].

However, one can question if the physical changes that happened to the experimental group can be attributed to the Alexander Technique. Other possible reasons for these changes will be investigated later.

Chapter 6

Looking for Attitudinal Changes in in each Pupil

Introduction

This chapter focuses on the attitudinal difficulties and changes presented by the piano pupils. The first section deals with the pupils who presented 'evident beneficial attitudinal changes'. It also includes possible explanations why these changes happened, based on Lowen's and Keleman's theories, and on the ideas provided by the writers on the Alexander Technique as presented in Chapter 3. The second section deals with the pupils who had 'no evident or only slight, attitudinal changes', with subsequent possible explanations, based on the same theories. The third section is dedicated to the special cases.

As in the previous chapter, the original criteria for observation adopted by the observers were enriched by sub-criteria. For this reason, the four attitudinal categories - attentiveness, levels of anxiety, self-confidence, and motivation - will include other topics, as the table 6.1 shows (see next page). It is important to re-emphasise that the term 'attitude' involves all the aspects previously raised by Alexander and Carrington, in Chapter 3, as follows: how people use their bodies and how they use their bodies in activity; how people think ('mental attitude'), and how people feel; how people deal with the environment and with others.

Table 6.1 Categories of attitudinal problems presented by piano pupils

Attentiveness - *ability to focus on the activity.*

- Carelessness - *no attention to executing the music details carefully.*
- Lack of commitment - *lack of responsibility with regard to the lessons and to performance.*
- Shyness - *introspective personality.*
- Apathy - *no interest or no care about the lessons and the performance.*
- Sleepiness - *feeling sleepy or tired during the lessons.*
- Laziness - *lack of effort to execute the activities or slow response to piano teacher.*
- Resistance to read music scores - *no interest, or not enough effort to read music.*

Levels of anxiety - *excessive concern about performance, with potential physical tension.*

- Agitation - *excessive anxiety or nervousness in the piano lessons.*
- Impatience - *no patience to overcome difficulties step-by-step.*
- Irritation - *being irritated in the piano lessons.*
- Nervousness - *because of performance or because of the camera.*
- Bad humour - *inability to enjoy the activities and the performance.*
- Talkativeness - *excessive talking during the lessons.*

Self-confidence - *ability to trust oneself.*

- Insecurity - *lack of confidence in oneself.*
- Comparison with peers - *feeling of being less competent than one's peers.*
- Criticism - *of oneself or others.*
- Defensiveness or self-protection - *protecting oneself from potential danger.*
- Demanding - *on oneself or on others.*
- Aggression - *angry or threatening attitude.*
- Impoliteness, disrespectful attitude, and no response to the teacher's requests
- Inadequate comments during the lessons - *taking about issues that disperse attentiveness in the activity.*

Motivation - *willingness to do the activities and to perform music.*

- Lack of curiosity - no *desire to learn.*
- Frequent delays - *coming late to the lessons.*
- Frequent absence - *not coming to the lessons.*
- Lack of involvement or indifference - *with the learning process or with the performance.*
- Lack of pleasure - *in learning or performing music.*
- Lack of interest - *in playing a specific piece of music.*

This chapter draws special attention to the observations on pupils' attitudes provided by the participant observers - piano and Alexander teachers and the researcher. Overall, the independent observers did not supply many comments on this aspect, perhaps because it is difficult to assess pupils' attitudes only through the observation of their pre-and post-test performances. The Alexander panel, however, provided insightful comments which will be included as much as possible in the summary descriptions offered in the next sections.

6.1 Evident beneficial attitudinal changes

Eight pupils in the experimental group had evident beneficial attitudinal changes: Alan (experimental group 1), Daniel (experimental group 3), Bob (experimental group 4), Frank (experimental group 6), Jill (experimental group 7), Ivy (experimental group 8), Glenda (experimental group 9), and Hugh (experimental group 10).

6.1.1 Alan, experimental group 1 - tables 6.2 and 6.3

Alan seemed to like playing the piano. But in the baseline period he was always late, and did not attend the lessons twice. Alan seemed to be able to focus on the activity, but he followed the piano teacher's instructions in a careless, indifferent, and apathetic way. He was shy, but occasionally was slightly irritated in the piano lessons. Perhaps this irritation was related to his anxiety to play the musical pieces soon, before knowing the notes well. He was always rushing, and had difficulties in playing slowly, when required by his piano teacher to do so. He was embarrassed and insecure, because of his peer's (Adam, control 1) musical improvements. In sum, Alan presented a non-stable enthusiasm in relation to the instrument, and did not seem to be committed to his piano lessons. Although musical, Alan could not express his musical potentialities totally. In the Alexander lessons, Alan also had difficulty in

keeping still, and presented some compulsive tics in his body, which denoted anxiety, agitation and difficulty to focus on the activity.

Table 6.2 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Alan experimental group 1	**1. Poor attentiveness** - *teacher A Alexander teacher researcher* →	Decrease of anxiety - *Alexander D teacher A researcher*
	- Carelessness - *Alexander B, C teacher A researcher* →	More careful in playing - *Alexander B, C teacher A researcher*
	2. Some anxiety - *teacher A Alexander teacher researcher* →	Decreased anxiety - *teacher A researcher* More patience - *teacher A*
	- Impatience - *teacher A researcher*	Able to play slowly - *Teacher A researcher*
	3. Some lack of self-confidence - *teacher A* →	Increased confidence in playing - *Alexander B*
	- Shyness - *teacher A Alexander teacher researcher*	
	4. Oscillation in motivation - *teacher A Alexander teacher researcher* →	Increased motivation - *Alexander D*
	- Frequent delays - *researcher*	- More involved with the performance - *Alexander A, C*
	- Lack of commitment - *teacher A Alexander teacher researcher*	- Increased readiness to play - *Alexander A*
	- Apathy - *Doctor B researcher*	- More respectful attitude towards playing - *teacher D* - Different attitude towards the instrument -
		- Increased intention of doing better - *Alexander D*

Alan's difficulties can be interpreted in the light of Lowen's and Keleman's theory, previously discussed in Chapter 3. He showed two opposite tendencies in terms of attitude, as presented in table 6.3.

Table 6.3 Alan (experimental group 1)
Summary of attitudinal problems

An 'underbound' attitude	- Lack of commitment - Missing piano lessons - Careless - Indifferent - Oscillating motivation - Shy
An 'overbound' attitude	- Anxious - Compulsive tics - Impatient - Agitated

Alan's first tendency, shown by a floppy attitude and lack of energy, is coherent with the observations made by the participants concerning his physical problems - strong trunk collapse, flaccid lumbar musculature, and lack of grounding. In Keleman's terms, this corresponds to an 'underbound structure'. The second tendency shows Alan as an anxious person, who presented difficulty in keeping concentration, and agitation, which corresponds with his physical tendencies: excess of movements, compulsive tics, and some tension - an 'overbound structure'. In sum, Alan seemed to be internally 'overbound' (tense), but his postural attitude was underbound (flaccid). If this is a plausible interpretation, in Alexander terms, Alan presented an unbalanced psycho-physical attitude during the piano lessons; he was the typical 'end-gainer', and was not grounded, physically and emotionally.

6.1.2 Daniel, experimental group 3 - table 6.4

Daniel had a very good concentration, mental calmness, self-confidence, and motivation. He used to participate in the piano lessons, asking questions, and was curious about novelties. He also learned very quickly. Daniel transmitted his good qualities to his performance, as the comment below exemplifies:

> I was surprised how non-judgemental he is. He was very pleased playing the instrument. He doesn't get easily discouraged (Alexander panel member A).

However, Daniel demonstrated some nervousness because of the camera. He was also anxious to play, because he tended to be in a hurry to learn. In the Alexander lessons, he had some agitation and difficulty in keeping still during the lessons. He 'controlled himself too much, and had difficulty in relaxing' (Alexander teacher - Alexander lesson 3), which indicates excessive self-control.

Table 6.4 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Daniel experimental group 3	**1. Very good attentiveness** - *teacher C researcher*	
	2. High level of anxiety - *teacher C Alexander teacher researcher* →	Decrease of anxiety - *Alexander teacher teacher C* - Different attitude towards the instrument - *Doctor A musician E* - Better control of the activity - *teacher C*
	3. Very good self-confidence - *teacher C researcher* →	Improved pleasure in performing - *Alexander C*
	4. Very good motivation - *teacher C researcher*	

To explain Daniel's attitudinal difficulties, we might suggest that he had no difficulties in learning, but was very demanding on himself and excited to learn. He wanted to see the results of his learning: he was an 'end-gainer' in Alexander's terms. He also wanted to please his teacher and follow her instructions well. But this excess of excitement made him anxious during the process of learning. Daniel's attitudinal characteristics correspond to Keleman's 'overbound' structure, as his level of anxiety matches his high level of physical tension, pointed out by observers in the previous chapter.

6.1.3 Bob, experimental group 4 - table 6.5

Bob was motivated to play the instrument. But he came really late to the lessons during the baseline period, saying that he went to the dentist, or he went to bed late the previous evening, and could not wake up in time. He was an agitated boy, who moved and spoke constantly, getting out of his seat and walking around. This attitude distracted him from playing.

Table 6.5 . Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Bob experimental group 4	**1. Bad attentiveness** - *Alexander B, D teacher A researcher* →	Increase in attentiveness - *Alexander B, D teacher A*
	2. High level of anxiety - *Alexander D teacher A Alexander teacher researcher* →	Decrease of anxiety - *Alexander D teacher A researcher*
	- Impatience - *teacher A*	- Better control of the performance situation - *Alexander B researcher*
	teacher A researcher	
	3. Low self-confidence - *teacher A researcher* →	Increased confidence - teacher A researcher
	- Insecurity - *Alexander C teacher A researcher*	
	- Comparison with peer - *teacher A* →	Increased motivation - *teacher A researcher*
	4. Very good motivation - *Alexander A teacher A researcher*	- More committed with the activity - *teacher A*
	- Frequent delays - researcher	- More interest in solving the problems - *teacher A*
		- Taking time to do the activity - *Alexander A*
		- No difficulties with the camera - *teacher A researcher*
		- Pleased with himself - *Alexander A*
		- More aware of the work to be done - *teacher A*

In terms of self-confidence, Bob presented some difficulties: he used to interrupt his performance, complaining that the piano was a bad instrument. He was nervous because of the video-recording during the baseline period. Sometimes, in the middle of the performances, he looked at the teacher and at the camera. He was also concerned about playing badly whilst being video-recorded. He was irritated with his own mistakes, which were many, and was disappointed by encountering difficulties, saying, 'oh, no!' He seemed not to believe that he would be able to follow the teacher's instructions, and compared himself with his peer (Ben, control group 4). In the Alexander lessons, Bob was hyperactive, presenting great difficulty in focusing on the activities.

These comments suggest that Bob's main problem was lack of confidence, which made him feel extremely anxious. His uncertainty in relation to his own abilities made him hesitate constantly, and he was always fighting to execute the activities in the correct way. When he was not able to get good results, he felt bad and insecure in front of his teacher, peer, and the camera. He compensated for his anxiety with excessive movements. This picture is compatible with Bob's physical condition: a tense boy, with an 'overbound' structure, in Keleman's view.

6.1.4 Frank, experimental group 6 - table 6.6

Frank had a singular attitude towards his piano learning and playing. His piano teacher gives an example of recognising his good qualities as a pupil in the following quotation:

> This boy is wonderful! He is gold! (teacher D).

In both piano and Alexander lessons Frank was a very calm person, without any difficulty in keeping still. He was concentrated, serious, and involved with his piano playing. If one considers Lowen's and Keleman's views, Frank would be considered as a person who can express himself without emotional barriers, but with satisfaction

and pleasure. Frank's positive attitude towards his process of learning corresponded to his physical condition, which was also a good one.

Table 6.6 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Frank experimental group 6	**1. Very good attentiveness** - *teacher D Alexander teacher researcher* →	Increased attentiveness - *Alexander C*
	2. Very good mental calmness - *teacher D Alexander teacher researcher* →	Increased calmness - *Alexander A, D teachers B, F researcher*
	3. Very good self-confidence - *teacher D Alexander teacher researcher* →	More maturity - *Alexander A* - Different relationship with the instrument - *Alexander A teacher D* - Different relationship with the music - *Alexander A* - Different relationship with himself / different mental attitude - *Alexander A, B, C*
	4. Very good motivation - *teacher D Alexander teacher researcher*	

6.1.5 Jill, experimental group 7 - table 6.7

Jill's attitude was good in general in both piano and Alexander lessons. She was motivated, self-confident, and good-humoured. She also had a good ability to focus on her playing, but was sometimes dispersed and careless, playing around, especially with the camera. She was also occasionally agitated and sleepy. Alexander panel member A's comment illustrates Jill's temperament:

> She seems quite natural. But you know …perky, really perky! Fun!

Jill was physically well coordinated, with good level of vital energy, and able to express herself in the world without barriers. Her excitement and immaturity may be the reasons why she was careless, agitated, and at times sleepy during the piano lessons. Probably these slight attitudinal problems made her process of learning the piano slower than it could be otherwise.

Table 6.7 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Jill experimental group 7	**1. Some lack of attentiveness** - *teacher D researcher* →	Improved attentiveness - *teacher F researcher*
	2. Slightly agitated - *teacher D researcher* →	Improved calmness - *Alexander B, C, D teacher F Alexander teacher researcher*
	- Some careless - *researcher*	
	3. Very good self-confidence - *teacher D researcher* →	Improved self-confidence - *researcher*
	- Very good humour - *Alexander A researcher*	- Better control of the performance situation - *Alexander B, C*
	4. Slight oscillation in motivation - *teacher D Alexander teacher researcher* →	Improved motivation - *researcher*
	- Some sleepiness - *researcher*	- Improved responsiveness - *teacher F*

6.1.6 Ivy, experimental group 7 - table 6.8

Ivy had a very good attitude in both piano and Alexander lessons. Ivy seemed to be confident, although very shy, and occasionally nervous about performing. She was recognised to be a shy and self-critical person. Combined with these slight attitudinal difficulties, as mentioned before, Ivy had some postural collapse and lack of grounding, although able to keep her trunk upright. However, she presented some tension. Perhaps she tended to have an 'overbound' structure, which is indicated by her internal tension and nervousness. To some extent, Ivy herself endorses this argument: she declared to the Alexander teacher that she used to take sleeping pills. A comment by Alexander panel member A suggests that Ivy had some kind of defensive pattern:

> I don't [get much out of her]. She is pretty well behind a cover or something. I think she doesn't want to get shot down, probably. She is really hiding…wherever it is that she wants to say with the music, she is not sharing it with us, she is keeping it pretty much to herself, she is very self-contained. And probably she judges either herself or she is waiting for somebody else to judge her. She is quite self-critical.

Table 6.8 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Ivy experimental group 8	**1. Very good attentiveness** - *teacher E Alexander teacher researcher*	
	2. Good level of mental calmness - *teacher F Alexander teacher researcher*	→ Increased calmness - *Doctor A Alexander B Alexander teacher teacher E*
	- Some nervousness to perform - *teacher F researcher*	- Better control of the performance situation - *teacher E researcher*
	3. Good level of self-confidence - *teacher F Alexander teacher researcher*	→ Increased confidence - *Alexander A*
	- Shyness - *musician D Alexander teacher researcher*	
	- Strong self-criticism - *Alexander A*	
	4. Very good motivation - *teacher F Alexander teacher researcher*	

6.1.7 Glenda, experimental group 7 - table 6.9

Glenda kept a very good attitude towards her piano learning throughout the entire experiment. It seems that she did not present any specific pattern of tension and defence, in Lowen's and Keleman's terms.

Table 6.9 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Glenda experimental group 9	**1. Very good attentiveness** - *teacher D Alexander teacher researcher*	→ Increased attentiveness - *Alexander C*
	2.Very good mental calmness - *teacher D Alexander teacher researcher*	→ Increased calmness - *Alexander A, B, D*
		- Improved ability to 'take time' or 'inhibit' - *Alexander A, D*
	3. Very good self-confidence - *teacher D Alexander teacher researcher*	
	4. Very good motivation - *teacher D Alexander teacher researcher*	→ Increased motivation - *teacher D*

6.1.8 Hugh, experiment group 10 - table 6.10

Hugh was very motivated and self-confident, but also highly agitated, distracted, talkative, and anxious. He moved out of the seat all the time. For these reasons, he lost concentration and mental calmness many times in the Alexander and piano lessons. His piano teacher provides examples of his anxiety:

> He was a kind of hyperactive pupil. In order to give him piano lessons, I needed to ask him to run three times around the school, and once more in the contrary direction. After that, he had to wash his face and hands, before coming to play the piano. This was the way I found to deal with him last semester. Otherwise he would be too agitated during the piano lesson (teacher D, panel of piano teachers).

And later:

> He has a restless spirit (teacher D, panel of piano teachers).

Table 6.10 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions		Attitudinal changes	
Hugh experimental group 10	**1. Poor attentiveness** -	*Alexander A teacher D Alexander teacher researcher*		
	2. High level of anxiety -	*Alexander A teacher D Alexander teacher researcher*	→ Decreased anxiety -	*teacher D Alexander teacher researcher*
	3. Very good sel-confidence -	*teacher D Alexander teacher researcher*	→ Increased confidence -	*Alexander D*
			- More involvement with the music -	*Alexander D*
	4. Very good motivation -	*teacher D Alexander teacher researcher*		

Hugh did not show any incoherence between his physical, emotional, and mental attitude, if one considers what has been stated about his physical conditions in the previous chapter. He would probably be considered as having an 'overbound' structure by Keleman, as his high level of anxiety matches his excessive tension and movements.

6.1.2 Possible reasons for the evident beneficial attitudinal changes showed by the pupils in the experimental group

All these pupils in the experimental group, Alan, Daniel, Bob, Frank, Jill, Ivy, Glenda, and Hugh, presented beneficial changes in attitude, in all the four topics of this aspect (attentiveness, level of anxiety, self-confidence, and motivation). The *level of anxiety* was the topic most discussed by the observers. These pupils demonstrated decreased anxiety, or improved calmness, which can be illustrated by the comments below.

> *Alan (experimental group 1)* -He [was] dealing with the musical passages with more calm and less anxiety (teacher A, piano lesson 7).

> *Daniel (experimental group 3)* - His will to learn and to discover new things comes together with a calmness which he did not have before (teacher C, piano lesson 7).

> *Bob (experimental group 4)* - He told me that this week he was doing an English assessment, and his mind was a vacuum. But Bob was able to give the following orders to his mind: "Calm down, you will remember". Suddenly he could remember everything. Working on his agitation on the table, step-by-step he was able to transfer his mental orders to his body and became calmer. He started releasing his head on my hands for the first time! When he stood up, he was much more grounded and calmer, without making so many movements (Alexander Teacher, Alexander lesson 8).

Frank (experimental group 6) - In the post-test performance, it seems that he was more comfortable, calmer [about playing]. [Not only did he seem to command] the piece better, but he presented real tranquility (teacher F, panel of piano teachers). And the look in his face; he is quite anxious here [pre-test], and he isn't there [post-test] He was so dispersed in the pre-test, he was all over the place. And now [post-test], tchuuuuu!! [meaning that Frank was focused] (Alexander panel member A).

Ivy (experimental group 8) - She was tranquil enough to play musically well (teacher D, panel of piano teachers). I saw many differences. After the last video-recording I told myself: "What a difference from the first day she video-recorded performances [pre-test] to the second!" [post-test]. Especially in the Villa-Lobos piece. We worked on this piece in the previous semester, and we did not practice it lately, in order to prepare Ivy for the final video-recording. In the pre-test recording she was in despair, concerned about mistakes. In the post-test, she was perfectly calm. This was the same thing I observed in that boy, Frank (experimental group 6). The same thing! (teacher E, panel of piano teachers). This was the kind of thing that I noticed…posture and this calmness about performing…the second time she played [post-test] her posture was different. I am not talking about bodily posture. I am referring to attitude (teacher F, panel of piano teachers).

Secondly, *self-confidence* seemed to have improved in many of these pupils. The comment below exemplifies this topic:

Bob (experimental group 4) - Actually, he is pleased with himself in that one [post-test]. Isn't he? He is happy because he played nicely. All the kinds of peripheral interferences have just disappeared. And he is centred and focused. All the worries, or anxieties, or lack of confidence are not there. Amazingly different! Actually it's amazing (Alexander panel member D).

Examples of *improvement in commitment, pleasure, and respect for the activity of playing* follow below:

> *Alan (experimental group 1)* - [In the pre-test], he was playing as if he were doing something else; [in the post-test] he was really playing the piano (teacher D, panel of piano teachers).

> *Daniel (experimental group 3)* - [Post-test] He seems a lot happier at the end of this second one (Alexander panel member C).

> *Frank (experimental group 6)* - And he is doing it for himself [post-test] (Alexander panel member A).

Some examples of *different attitudes towards music and the instrument:*

> *Frank (experimental group 6)* - His position in relation to the instrument is different, and also the intimacy with the instrument, which does not depend on familiarity with the piece. In the [post-test] performance I feel that this intimacy improved (teacher D, panel of piano teachers). From the beginning of the [post-test] performance, he had another attitude, completely different (teacher E, panel of piano teachers). He really changed his whole [attitude] from being there, to being with it, with the instrument and the music. He got a new relationship...to himself, to the instrument, and to the music. This is quite something! That's extremely impressive (Alexander panel member A).

On maturation:

> *Frank (experimental group 6)* - I wondered if he was the same boy. This boy [pre-test] looks quite young, whereas this boy [post-test] has a maturity (Alexander panel member A).

On responsiveness:

> *Jill (experimental group 7)* - Sometimes I asked the same things to both pupils, Jill and Joe (control group 7). From a certain point on, Jill started always answering my requests positively. Joe didn't. For instance, I requested them to put their feet on the floor, and Joe did not agree with this. Suddenly Jill started responding promptly and quickly (teacher F, panel of piano teachers).

On *improved ability to 'take time' or to 'inhibit':*

> *Glenda (experimental group 9)* - So fantastic, her inhibition. She is preparing herself, and the beauty of that state of being opened...it is just beyond words! It's just amazing, absolutely amazing. And the way she took her time in the beginning of that piece, it's just unbelievable. Absolutely beautiful! She is coming back to herself, she is grounding, centering, preparing...calming down (Alexander panel member D).

If the beneficial attitudinal changes experienced by these pupils in the experimental group happened as a consequence of the Alexander Technique lessons, the following points may explain how the Technique helped them to accomplish such changes. The Alexander Technique helped pupils to *change their stereotyped patterns of reaction to stimuli.* As reported in Chapter 3, it was asserted by Lowen, Keleman (stating the psychoanalytic view) and Barlow (stating the Alexander view) that physical tension is directly associated to stereotyped responses, such as fear, insecurity, anxiety, and agitation. As Alexander (1923: 45) states, unbalanced development connotes unsatisfactory equilibrium in all spheres, and unsatisfactory equilibrium is associated with fear. If piano pupils present all sorts of physical collapses and bad alignment between the body's segments (neck projections and retractions and trunk compensation), this means that their psycho-physical selves are disintegrated and disconnected. Pupils' attitudes represent one aspect of such unbalance and disintegration, because emotions and feeling are associated with physical fragmentation: they reinforce one another in a closed loop (Page, 1984: 5).

In sum, pupils' patterns of tension and stereotyped attitudinal responses are manifested through an unbalanced use of the psycho-physical self; on the other hand, physical unbalances perpetuate these responses. If piano pupils feel insecure, afraid, or anxious they tend to 'do' things to their bodies, such as 'pull the head back and down', 'compress their trunks', and' hold their breathing'. However, if they stop doing these things to their bodies, they can stop responding in stereotyped ways, and choose to respond to the stimulus to perform in a more balanced and calm way. As a method of re-education of the psycho-physical self, the Alexander Technique brings about a change in the individual *as a whole* by introducing a change in her or his total habitual pattern of reaction on a conscious level (Jones, 1998: 55, my italics). In other words, the Technique helps practitioners to modify the entire set-up of the organism, promoting positive changes in the use and functioning of the psycho-physical self.

It is interesting to notice that some of the pupils in the experimental group who showed more obvious positive attitudinal changes were the ones who had obvious physical unbalances and evident beneficial physical changes (Alan - experimental group 1, Daniel - experimental group 3, and Bob - experimental group 4). Perhaps the principle of 'inhibition' helped these pupils to stop their customary reaction. As an example, making the video-recording was a problem for many piano pupils, and may have been the cause of nervousness and anxiety presented by some pupils in the pre- and post-tests (Bob - experimental 4, Glenda - experimental group 9). In the post-test, some pupils may have felt the responsibility involved in presenting a good performance for the research; at that stage, they knew that these performances would be presented to others. Musician D offers an illustrative comment on this point:

> The children know that they are going to be video-recorded again in the second part [post-test], so they are really concerned about this. Maybe without the camera it would be easier.

According to some observers (teacher A and D, researcher), Glenda (experimental 9) and Bob (experimental group 4) seemed to be nervous because of the post-test video-

recording, but they controlled the situation well, and also presented evident improvement in performance, as will be seen in the next chapter.

However, inhibition is not enough. If these pupils were able to inhibit their usual nervousness and anxiety without redirecting their ways of reacting to the stimulus of performing, they would lose something without having anything to compensate for that loss. Ivy (experimental group 8) provided a good example of this situation, which is illustrated by the comment offered by the Alexander teacher:

> Ivy (experimental 8) stopped gripping with her toes and said that she felt a sensation of "emptiness", which, step-by-step, was less difficult for her to deal with. This is the first time in which her toes did not draw up during the lessons. She told me why it was so difficult for her to let the patterns of tension go; for her, this produced a feeling of loss (Alexander lesson 5).

Since these pupils were able to inhibit their stereotyped responses, the Alexander principle of 'direction' helped them to find a new balance for their whole organism. Together, inhibition and direction allow Alexander practitioners to 'work on themselves'; this can, once more, be illustrated by a comment made by the Alexander teacher on Ivy's (experimental group 8) attitudinal improvements.

> Ivy told me that lately she used to take pills in order to sleep. Last Saturday, she woke up during the night and started working on her breathing, so she could sleep. She told me that she did not take pills anymore, from that day on (Alexander lesson 9).

In sum, to recall what has been discussed in Chapters 2 and 5, in the Alexander practice what brings integration to the organism is conscious direction, which depends on practitioners' willingness to redirect their primary control (head, neck, trunk relationship) in such a way that the organism becomes more integrated as a whole. Direction comes as a consequence of the release of excessive tension, and promotes

the lengthening of the spine and expansion of the entire organism. The prior direction is 'up', but there is no possibility of directing 'up' without being grounded on the floor. Additionally, conscious direction also involves expansion of the segments of the body in multiple directions - the 'antagonistic pulls' within the organism - which means that each segment of the body is constantly expanding and lengthening, releasing away from the others. In this way, the piano pupils in the experimental group who had major attitudinal changes improved their ability to consciously release tension, grounding on the floor, directing themselves 'up', and expanding their organisms towards the world ('out'). The ability to ground and expand helped them to be emotionally grounded, as Lowen suggested in Chapter 3. These pupils felt more confident, calmer, connected with themselves and with the reality, and present 'in the moment'.

Table 6.11 Summary of pupils with evident beneficial attitudinal changes

Experimental Group	Alan (experimental 1) Daniel (experimental 3) Bob (experimental 4) Frank (experimental 6) Jill (experimental 7) Ivy (experimental 8) Glenda (experimental 9) Hugh (experimental 10)

6.2 Attitudinal changes not evident, or only slight

Ella (experimental group 6) was the only pupil in the experimental group who did not present evident attitudinal changes, according to the majority of observers. In the control group, a number of pupils did not present evident changes in attitude either:

Adam (control group 1), Colin (control group 2), Dora (control group 3), Ben (control group 4), Ed (control group 5), Flora (control group 6), Iris (control group 8), Greg (control group 9), and Henry (control group 10).

6.2.1 No evident attitudinal changes in one pupil in the experimental group: Ella, experimental group 5 - table 6.12

Ella had a very good attitude in the piano and Alexander lessons. She was considered to be a shy person, who does not open her feelings, and does not get deeply involved with music. Sometimes she also showed some apathy in relation to her piano learning process. Throughout the entire experiment, Ella presented the same good qualities in attitude, being always available. No specific change in attitude can be attributed to Ella, according to the observers' comments (see table 6.12 on the next page).

6.2.2 Why Ella (experimental group 5) did not present changes in the attitudinal aspect

It seems that the Alexander lessons had positive effects on Ella's attitude. The Alexander teacher's notes offer some clarification in this respect. For instance, after having her third Alexander lesson, Ella said that she was calmer during the week. Perhaps, Ella was responding to the Alexander work very slowly, as she was quiet and shy. Besides, it is interesting to re-emphasise that Ella did not present evident beneficial changes in the physical aspect. Probably she was self-protective, and would need to have a longer experience with the Alexander Technique to present evident changes in the physical and attitudinal aspects. A comment by Alexander member A illustrates this possibility:

Maybe because of being very tall, very attractive...obviously, she is a good-looking lady. And she is only fourteen, that's why I asked what her age was. I think she is probably dealing with older expectation, as a young woman, much older, beyond her own age. And she is not going to be pushed around. Do you know what I mean? "You are maybe expecting all of this, and I am maybe attractive, and it feels nice to be attractive, but I wear my long ear-rings, and my long hair, but I am [going to] go out and play volleyball". "I am still my fourteen-year-old self". I don't know, there is something there!

In any case, if Ella felt calmer, this did not influence her attitude in the piano lessons in any obvious way, according to the majority of observers.

Table 6.12 No evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Ella experimental group 5	**1. Very good attentiveness** - *Alexander teacher teacher D researcher*	
	2. Very good mental calmness - *Alexander teacher*	→ Increased calmness - *Alexander teacher*
	3. Good self-confidence - *Alexander teacher teacher D researcher* - Shyness - *musicians A, B, C teacher D researcher* - Some apathy - *researcher*	
	4. Good motivation - *Alexander teacher teacher D researcher* - Lack of involvement with music - *Alexander A teacher D researcher*	

6.2.3 Attitudinal changes not evident, or only slight in some pupils in the control group

Adam (control group 1), Colin (control group 2), Dora (control group 3), Ben (control group 4), Ed (control group 5), Flora (control group 6), Iris (control group 8), Greg (control group 9), and Henry (control group 10).

6.2.3.1 *Adam, control group 1 - table 6.13*

Adam was patient, attentive, available, self-confident, and motivated in the piano lessons. He had a very positive attitude in relation to the instrument and the wish to do everything well, showing pleasure that his playing was flowing nicely. Sometimes, Adam was sleepy, slow, impatient and anxious, careless, and uninterested.

Table 6.13 No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions	Attitudinal changes
Adam control group 1	**1. Good attentiveness** - *teacher A, researcher*	→ Some improvement - Alexander A, B in attentiveness
	- Some sleepiness - *researcher*	
	- Some laziness - *researcher*	
	2. Occasional anxiety - *teacher A, researcher*	→ Decreased anxiety - *Alexander D*
	- Some impatience - *researcher*	
	3. **Very good self-confidence** - *teacher A, researcher*	→ Increased self-confidence - *Alexander D*
	4. Very good motivation - *teacher A, researcher*	
	- Pleasure in playing the instrument - *researcher*	
	- Some carelessness - *researcher*	
	- Some absence - *researcher*	

6.2.3.2 Colin, control group 2 - table 6.14

Colin did not have any attitudinal problem. He was endowed with the ability to focus on the activity, and was confident and calm. Colin presented occasional agitation and dispersion, especially when he was talking too much to his peer (Conor, experimental group 2). He also had some oscillation in motivation.

Table 6.14 No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions		Attitudinal changes	
Colin control group 2	**1. Good attentiveness** -	*teacher B researcher*	→ Improvement in attentiveness -	*Alexander B, C*
	- Occasional dispersion -	*Alexander B teacher B researcher*		
	2. Very good mental calmness -	*teacher B researcher*	→ Improved calmness -	*Alexander D*
	3. **Very good self-confidence** -	*teacher B researcher*		
	4. Some oscillation in motivation -	*teacher B researcher*		
	- Slight absence -	*Alexander B*	→ Increased apathy and less energy to play the piece -	*musicians A, B*

6.2.3.3 Dora, control group - table 6.15

Dora was a very good pupil in terms of attitude. She participated very well in the lessons, asking questions, dialoguing with the teacher and with her peer (Daniel, experimental group 3). She had very interesting opinions, which she expressed

spontaneously. However, Dora tended to lose concentration easily, and to get anxious because she would like to learn the pieces as quickly as her peer. An example of Dora's concern about learning is offered by Alexander panel member A's comment:

> She is still anxious...Bless her, she was trying [to execute the music well]. She was trying so hard that it was killing her.

Table 6.15 . No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions	Attitudinal changes
Dora control group 3	**1. Reasonable attentiveness** - *teacher B researcher*	Increased attentiveness - *Alexander B*
	- Some dispersion - *Alexander B teacher B researcher*	
	2. Good mental calmness - *teacher C researcher*	Increased nervousness - *teacher C* about playing
	- Worry about learning - *teacher C researcher*	- Decrease of anxiety - *Alexander D*
	3. Good self-confidence - *teacher C researcher*	
	- Comparison with peer - *teacher C*	
	4. Very good motivation - *teacher C researcher*	
	- Very good participation in the lessons - *researcher*	

6.2.3.4 Ben, control group 4 - table 6.16

Ben showed that he possessed a very good attitude in relation to his piano learning and playing, being attentive, calm, confident, and motivated. He carefully observed

the piano teacher's demonstrations and instructions, following them well. Ben (control group 4) used to come earlier to the piano lessons in order to practise, as he did not have an instrument at home. He presented occasional sleepiness and some oscillation in his motivation. Besides, he was not motivated to play one specific piece of music (CD Rom 1, piece a). He presented some anxiety in relation to the performance situation; this was shown by the excessive movements of his lips. Alexander panel member A offers an interesting comment on Ben's attitude towards his playing:

> He was including other people in his performance, which I think is very nice. He has a kind of generosity there.

Table 6.16 No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions	Attitudinal changes
Ben control group 4	**1. Very good attentiveness** - *teacher A, researcher* - Occasional sleepiness - *researcher*	
	2. Very good mental calmness - *teacher A, researcher* - Some anxiety in the performance situation - *Doctor A*	→ Slight decrease of anxiety - *Doctor A*
	3. Very good self-confidence - *teacher A, researcher* - Good communication with listeners ('generosity') - *Alexander A*	
	4. Some oscillation in motivation - *teacher A* - Lack of interest in playing a specific musical piece - *teacher A*	

6.2.3.5 Ed, control group 5 - table 6.17

Ed (control group 5) seemed to be a protective person. But he was also curious, critical, and demanding, getting upset over the presence of the camera, the bad quality of the piano available, and his own mistakes during performance.

Table 6.17 No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions		Attitudinal changes
Ed control group 5	**1. Very good attentiveness** - *teacher D researcher*	→	Increased attentiveness - *Alexander B*
	2. Very good mental calmness - *teacher D researcher*	→	Increased nervousness - *teacher D*
	- Some anxiety in the performance situation - *Doctor A*		
	3. Very good self-confidence - *teacher D researcher*	→	Increased confidence - *Alexander A*
	- Criticism - *teacher D*		
	- Curiosity - *teacher D*		
	- Self-protection - *Alexander A*		
	- Demanding - *researcher*		
	4. Very good motivation - *teacher A researcher*	→	More connected with the instrument - *Alexander B*

6.2.3.6 Flora, control group 6 - table 6. 18

Flora (control group 6) was very concentrated and motivated. She presented some oscillation in mental calmness and confidence. For instance, she was occasionally agitated and seemed to be very concerned with her playing. She became nervous

because of the recordings, especially in the post-test. Flora stopped the performance several times, but in the end she was able to control the situation.

Table 6.18 No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions		Attitudinal changes
Flora control group 6	**1. Very good attentiveness** - *teacher A researcher*		
	2. Some oscillation in mental calmness - *teacher D researcher*	→	Slight decrease in anxiety - *musician B*
	- Occasional agitation - *teacher D*		
	- Some nervousness about playing in front of the camera - *teacher D researcher*		
	- Concern with performance - *Alexander B*	→	Less concerned with performance - *Alexander C*
	3. Some oscillation in self-confidence - *teacher D researcher*	→	Improved self-confidence - Alexander A, B
	4. Very good motivation - *teacher D researcher*		

6.2.3.7 Iris, control group - table 6. 19

Iris (control group 8) was as a good piano pupil, with a very good attitude and musical potential. There was some oscillation in her attentiveness and motivation, but her mental calmness and self-confidence were very good. She gave the impression that she liked playing the piano. As time went by, Iris became a very difficult pupil to evaluate, because she was always late, and did not attend some piano lessons. She had some resistance against reading the new piece that she was learning, and was occasionally inattentive. She was considered to be 'an adolescent in crises' by her

piano teacher (teacher E). Interestingly, Alexander panel member A could see this 'crisis' in Iris's piano performances:

> ...there is a lot of breath holding, as if somebody was holding her physiognomy or her psychology. She is not welcoming this phase of her life. She looks isolated.

Table 6.19 No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions	Attitudinal changes
Iris control group 8	**1. Good attentiveness** - *teacher E researcher* - Occasional dispersion - *Alexander B teacher E researcher* - Resistance to reading new pieces - *researcher* **2. Very good mental calmness** - *teacher E researcher* **3. Very good self-confidence** - *teacher E researcher* - Pleasure in playing the instrument - *Alexander C* - Concerned about mistakes - Alexander C - 'Crisis adolescence' - *Alexander A teacher E* **4. Some oscillation in motivation** - *teacher E researcher* - Frequent absences and delays - *teacher E researcher*	None

6.2.3.8 Greg, control group 9 - table 6.20

Greg's attitude in the piano lessons was very good. He seemed to be willing, and to enjoy playing the piano. Some observers found that he was spontaneous, and had a

very sensitive, gentle, and interesting personality. This is illustrated by Alexander panel D's comment:

> He is very sweet. Very calm, isn't he? He hasn't had Alexander lessons, he is just naturally good, he naturally inhibits...He is calm. He is lovely. Such a lovely player! Oh gosh, he is no nice. It's beautiful. He hasn't had any [Alexander] work, I think, but he is fantastic! He is completely natural...

Table 6.20 No evident attitudinal changes - summary of pupils in the control group

	Initial attitudinal conditions		Attitudinal changes
Greg control group 9	**1. Very good attentiveness** - *teacher D, researcher*		
	2. Very good mental calmness - *Alexander B, D, teacher D, researcher*	→	Increased anxiety - *teacher F*
	3. Good self-confidence - *teacher D, researcher*		
	- Some lack of confidence to reading musical scores - *teacher D*		
	- Some self-protection or insecurity - *Alexander A*		
	4. Very good motivation - *teacher A, researcher*		
	- Pleasure in playing the instrument - *Alexander A, B, C*		
	- Interesting personality (gentle, sensitive, spontaneous) - *Alexander B, C, D*		

Sometimes Greg needed some incentive to believe in his abilities to read music scores by himself, which may represent some vulnerability in terms of self-confidence. Alexander panel member A captured Greg's nature, in terms of self-confidence, establishing an important relationship between his attitudinal and physical aspects:

He is sort of overwhelmed by something. He is hiding it. He needs a little bit more encouragement, and I don't think he is [going to] get it with this collapse in his front [meaning that his chest is compressed, and this denotes some kind of self-protection or insecurity].

6.2.3.9 Henry, control group 10 - table 6.21

Henry's attitude in the piano lessons was good. He seemed to be reasonably confident and motivated to play the instrument, and had a very good sense of humour.

Table 6.21 Evident attitudinal changes - summary of pupils in the experimental group

	Initial attitudinal conditions	Attitudinal changes
Henry control group 10	**1. Poor attentiveness** - *Alexander A teacher D researcher* **2. High level of anxiety** - *Alexander C teacher D researcher* - Playing with the camera - *researcher* - Agitation - *researcher* - Talkativeness - *researcher* **3. Reasonable self-confidence** - *teacher D Alexander teacher researcher* - Very good sense of humour - *Alexander A researcher* - Immaturity - *teacher D* - Insecurity - *researcher* **4. Reasonable motivation** - *teacher D researcher* - Indifference - *teacher D* - Not committed - *Alexander A*	None

However, Henry had some difficulty in focussing on his piano playing, as he was agitated and talkative, moving around the room. He was comfortable with the camera, but playing too much to it. He did not seem to be very mature but insecure, indifferent to his learning process, and not committed to the production of tone quality or concerned about presenting a good performance to others.

These nine pupils in the control groups - Adam, Colin, Dora, Ben, Ed, Flora, Iris, Greg, and Henry, did not show evident attitudinal changes to the majority of observers throughout the experiment and in the post-test performances. However, according to some observers, there was a slight attitudinal improvement, as well as attitudinal worsening in some, as summarised in the table below.

Table 6.22 Summary of some attitudinal changes in the pupils in the control group

	Attitudinal improvements	Attitudinal worsening
Control group	**1. Slight decrease of anxiety** - *Ben, control 4* **2. Decreased anxiety** - *Colin, control 2* *Dora, control 3* *Flora, control 6* **3. Decreased concern with the performance** - *Flora, control 6* **4. Increased attentiveness** - *Alan, control 1* *Colin, control 2* *Dora, control 3* *Ed, control 5* **5. Increased confidence** - *Alan, control 1* *Ed, control 5* **6. Increased pleasure in performing** - *Alan, control 1* **7. More connection with the instrument** - *Ed, control 5*	**1. Increased anxiety** - *Alan, control 1* *Greg, control 2* **2. Increased nervousness** - *Dora, control 3* *Ed, control 5* **3. Apathy and less energy in playing the piece** - *Colin, control 2*

6.2.4 Possible reasons why the majority of the pupils in the control group present slight or not evident attitudinal changes

Firstly, the assessments offered above shows that many pupils in the control group had some oscillation in terms of attitude. These oscillations can be considered normal, given that piano playing is a demanding activity, which involves many aspects, and is vulnerable to different factors.

Secondly, for the majority of observers, the aspect 'attitude' was the most difficult to comment on. This is clear in the tables, which show that many observers did not comment on this aspect at all. Alexander panel members B, C, and D used sentences such as 'it is difficult with this one' to express their assessment difficulties. Teacher D also had difficulty in evaluating the attitude of her pupil Henry (experimental 10), because he never practised, and did not show real interest in improving his own playing. But he continued coming to the piano lessons. It is worth looking at her comments on Henry's attitude in the last piano lesson (lesson 8).

> *Ability to focus on the activity:* more or less. It is very difficult to evaluate this pupil.
> *Mental calmness:* more or less, or perhaps good.
> *Self-confidence:* thinking carefully, I believe I don't know!!
> *Motivation:* thinking carefully, I believe I don't know!!

Additionally, the mismatches in the observations offered by the panels reflect their difficulties to assess the pupils' attitudes. In the post-test performance, Dora (control group 3) showed decreased anxiety for Alexander panel member D and increased nervousness for teacher C. Alexander panel members B and C said that Colin (control group 2) was more attentive in the post-test, but for musicians A, B he was more apathetic. Ed (control group 5) seemed to be more confident, according to Alexander panel member A, but more nervous to teacher D.

A third interesting point to consider is that the pupils in the control group who presented slight attitudinal improvements also had physical improvements: Adam (control group 1), Colin (control group 2), and Dora (control group 3). A fourth point: some typical attitudes presented by some pupils in the pre-test became even more noticeable in their post-test, as Alexander panel member C illustrates, when looking at some pupils' pre-and post-tests (Iris - control group 8, Greg - control group 9, and Henry - control group 10:

> One thing that I noticed with two of the three previous ones was that, in the second performance [post-test], they reinforced the habits of doing things that they had in the first one [pre-test]. Their habits became more and more apparent to me.

As a final point, some pupils of the control group who presented slight attitudinal improvements also had evident performance improvements, as will be seen in the next chapter. This was the case of Ed (control group 5), who was more confident and attentive when playing, and more connected with the instrument in the post-test. He probably presented slight attitudinal improvements because he had been practising the pieces and was able to play them better.

Table 6.23 . Summary of pupils with no evident attitudinal changes

Control Group	Adam (control1) Colin (control 2) Dora (control 3) Ben (control 4) Ed (control 5) Flora (control 6) Iris (control 8) Greg (control 9)	
Experimental Group		Ella (experimental 5)

6.3 Special cases

Two other pupils had evident beneficial attitudinal changes: Connor (experimental group 2) and Joe (control group 7). They are considered as special cases because they presented specific problems in attitude, which they changed due to the incidence of specific events.

6.3.1 Conor, experimental group 2 - table 6.24

Conor had a good attitude in relation to his piano learning and playing, in the first piano lessons (baseline period). Soon after these, his attitude became incompatible with the demands of piano learning. He started getting anxious, occasionally dropping his hands on the keyboard and making noises whilst his piano teacher was giving him instructions. He also presented impatience, irritation, inattentiveness, and sleepiness. Besides, he was very slow to respond, taking too much time to start the activities, making many mistakes, and questioning the teacher. In the third piano lesson, he declared to his piano teacher that he would not like to continue having piano lessons. From that point on, he was frequently late, did not practice at home, and was inattentive, and unresponsive during the lessons. Interestingly, he enjoyed his Alexander lessons and declared that he would like to continue coming to the music school, so that he would not lose the Alexander lessons. His piano teacher offers an illustrative comment on Conor's situation:

> The musical pieces continued in the same way, they didn't change. But Conor's lack of interest in the instrument is the cause of it. He would like to stop playing the piano; he would like to continue coming to the school because of the research [Alexander lessons]. He missed many piano lessons, he did not practice, and he was impatient. He was not interested, not involved.

The Alexander teacher wrote that, in the Alexander lessons, Conor presented a constructive attitude. From the beginning, he was concentrated, calm, self-confident, and motivated. These qualities improved throughout the lessons. The Alexander teacher wrote:

> Connor is very interested, focused, and participant (Alexander lesson 7). His understanding of the Alexander principles was excellent (Alexander lesson 9).

Table 6.24 Conor (experimental group 2) - Special case

	Initial attitudinal conditions	Attitudinal changes
Conor experimental group 2	**1. Bad attentiveness in the piano lessons** - *teacher B researcher* - Very good attentiveness in the Alexander lessons - *Alexander teacher* **2. Some anxiety in the piano lessons** - *teacher B researcher* - Irritation - *researcher* - Impatience - *researcher* - Nervousness - *teacher B researcher* - Some agitation in the first Alexander lesson/ very good mental calmness subsequently - *Alexander teacher* **3. Good self-confidence** - *teacher B Alexander teacher researcher* **4. Bad motivation in the piano lessons** - *teacher B researcher* - Very good motivation in the Alexander lessons - *Alexander teacher*	Conor's overall attitude in the piano lessons improved because he would like to continue having the Alexander lessons.

Alexander panel member A also offered an insightful comment that illustrates Conor's attitude towards his piano playing:

> I suspect he is a fighter. I wish him luck, very good luck. But I think somebody like that really needs to find something of their own, so that they can expand themselves.

These comments show that Conor's attitudinal problem in the piano lessons was his lack of motivation to play the instrument. However, he accepted the responsibility of coming to the music school and playing the pieces at home because of the Alexander lessons. But he continued playing without enthusiasm. It seems that the Alexander Technique had a positive effect on Conor 's personal life. But having the Alexander lessons did not help him to improve his motivation in relation to piano playing, as it did for other pupils (for instance, Glenda - experimental group 9). It may be suggested that the Alexander Technique will not enhance motivation in relation to a specific activity, unless this motivation already exists.

6.3.2 Joe, control group 7 - table 6.25

With regard to attitude, Joe was a difficult pupil. Many times during performance he stopped playing to discuss with his piano teacher, also making comments unrelated to the piano lessons. He was aggressive, impolite, defensive, and did not have a respectful attitude to the teacher and to his peer. Often Joe did not listen to the teacher's requests, and did not accomplish tasks with pleasure. He became easily irritated, especially when he was not able to execute a musical passage well. He seemed tired, disenchanted, and ill-humoured. He seemed to be motivated to play the piano, though.

Joe did not change his attitude until the fourth piano lesson, when something unusual happened. On that day, Joe's attitude was particularly difficult. During the lesson, he screamed at his piano teacher, who started crying. She talked to Joe, and the boy told her that he was tired. His piano teacher wrote:

I had to cry during the lesson, because he was too aggressive. After that, he changed, and started directing his energy to learning the piano (teacher F).

Table 6.25 Joe (control group 7) - Special case

Initial attitudinal conditions	Attitudinal changes
Joe control group 7 **1. Poor attentiveness** - *teacher F*, *researcher* - Careless and disregarding - *teachers A, B, C, D, E, F*, *researcher* **2. Some anxiety** - *teacher B*, *researcher* - Irritation - *researcher* - Impatience - *teacher* - Irritation - *teacher F*, *researcher* **3. Good self-confidence to perform** - *teacher F*, *researcher* - Aggression - *teacher F*, *researcher* - Impoliteness - *researcher* - Bad humour and oscillation of mood - *teacher F*, *researcher* - Defensiveness - *Alexander A*, *researcher* - Disrespectful attitude towards the teacher and peer - *researcher* - No attendance to the piano teacher's requests - *researcher* - Lack of pleasure in accomplishing the tasks - *researcher* - Inadequate comments during the lessons - *researcher* **4. Good motivation to perform** - *teacher F*, *researcher*	Joe's overall attitude in the piano lessons improved as a response to his piano teacher's reaction.

In the last piano lesson (lesson 8), Joe was calmer. But he was still aggressive and his humour was quite bad. He also seemed to be impatient with the post-test recording. But overall, Joe changed his attitude enormously in relation to his piano teacher, peer, and piano playing.

It is interesting to note that the panel of piano teachers was quite critical when they saw Joe's pre-and post-tests. They were impressed by the disregard with which he played the piano in both performances. Some piano teachers gesticulated to imitate Joe's careless way of playing. Looking at Joe's tests, Alexander panel member A said:

> I don't get the feeling he is doing it for himself. I get the feeling that the instrument doesn't make him feel...he doesn't connect himself with the instrument that much. There is a quite a bit of resistance, not in the bad way; he feels bored with it, which usually means that somebody isn't able to recover [from the activity]. But I think part of that is because he is so unsupported! I feel that his own system is not supporting him that much [meaning that he is not grounded and his body presents disconnections among parts; he is tired and his body is not a "whole". And [his] resistance is enormous. But I think if he got through [his] physical resistance, he could possibly get through this other one [attitudinal]. Because he wants a reward. He doesn't feel so good with himself. He can't wait till he gets to the end. He cannot wait. So, of course, that would make sense, if you get annoyed [with the activity]. But I am not saying that I think there is no change. His attitude did change, for the better.

Why Joe was so defensive in the piano lesson context? Perhaps he was afraid of something, or suffering emotionally for some unknown reason. His physical body showed a very strong collapse, as stated in the previous chapter. He was not considered to be tense, though, but had a flabby posture. If one considers Lowen's and Keleman's view, Joe was the piano pupil who presented the strongest defence pattern among all.

Table 6.26 Joe (control group 7) - Summary of attitudinal problems

Physical 'underbound' structure	An 'overbound' attitude
- Collapsed - Flabby	- Aggressive - Impolite - Irritated - Defensive - Disrespectful - Unpleasant

As the table above shows, Joe had an 'underbound' structure in his physical posture, and an 'overbound' structure in his attitude; this indicates conflict and fragmentation of the psycho-physical self. He was able to change his attitude in the piano lessons, but he did so as a response to his piano teacher's reaction. In sum, he did not change his habitual patterns of response, but adapted himself to the new context provided by his piano teacher.

Table 6.27 Summary of special cases

Experimental Group	Control Group
Conor (experimental 2)	Joe (control 7)

Summary and Conclusion

In the preceding pages, an analysis of the attitudinal problems and changes presented by the piano pupils was presented. This analysis suggests that many of these

attitudinal problems influenced negatively the pupils' process of learning and their performances, impairing or retarding pupils' musical development. Table 6.27 shows a summary of the attitudinal changes that happened to the control and experimental groups.

Table 6. 28 Summary of the attitudinal changes in the piano pupils

	Evident attitudinal changes	No evident attitudinal changes	Evident attitudinal changes Special cases
Experimental Group	Alan (experimental 1) Daniel (experimental 3) Bob (experimental 4) Frank (experimental 6) Jill (experimental 7) Ivy (experimental 8) Glen (experimental 9) Hugh (experimental 10)	Ella (experimental 5)	Connor (experimental 2)
Control Group		Adam (control 1) Colin (control 2) Dora (control 3) Ben (control 4) Ed (control 5) Flora (control 6 Iris (control 8) Greg (control 9) Henry (control 10)	Joe (control 7)

Nine out of ten pupils in the control group did not show evident attitudinal changes, or showed only slight ones. Similarly, one pupil in the experimental group did not show evident attitudinal changes. Two pupils were special cases, presenting evident changes in attitude due to specific reasons. The other eight pupils in the experimental group presented evident changes in attitude, according to the comments provided by the observers. Some started dealing better with the performance situation; some were able to 'inhibit' their habitual reactions, such as agitation, nervousness, and

distraction. Others presented a higher level of mental calmness and a different relationship with the instrument.

Table 6.28 offers an overview of the main attitudinal problems and improvements that the pupils of both groups had. This table suggests that the most significant positive effects of the Alexander Technique on the pupils in the experimental group were improvements in attentiveness and self-confidence and the reduction of anxiety, even if some of these pupils did not present problems in these areas.

Table 6.29 - Summary of attitudinal changes in the pupils in both groups

Experimental group			Control group
Attitudinal improvements ←	**Initial attitudinal conditions**		→ **Attitudinal improvements**
Experimental (1) Experimental (4) Experimental (2) Experimental (6) Experimental (7) Experimental (9) Experimental (10)	Experimental (1) Experimental (2) Experimental (4) Experimental (7)	**Lack of attentiveness**	Control (2) Control (7) Control (10)	Control (1) Control (2) Control (7)
Experimental (1) Experimental (2) Experimental(3) Experimental Experimental (4) Experimental (5) Experimental (6) Experimental (7) Experimental (8) Experimental (9) Experimental (10)	Experimental (1) Experimental (2) Experimental (3) Experimental Experimental (4) Experimental (5) Experimental (7) Experimental (8) Experimental (10)	**Anxiety**	Control (1) Control (2) Control (6) Control (7) Control (10)	Control (1) Control (2) Control (7)
Experimental (1) Experimental (4) Experimental (6) Experimental (7) Experimental (8) Experimental (10)	Experimental (1) Experimental (4) Experimental (8) Experimental (10)	**Lack of self-confidence**	Control (6)	Control (1) Control (5) Control (6)
Experimental (1) Experimental (2) Experimental (7) Experimental (9)	Experimental (1) Experimental (2) Experimental (7)	**Lack of motivation or oscillation in motivation**	Control (2) Control (4) Control (8)	Control (5)

If these attitudinal changes in the experimental group can be attributed to the Alexander Technique, it can be suggested that what really happened to these pupils was a change in mental attitude and self-awareness, concerning their own way of 'using their psycho-physical selves' in the piano performance. If so, during piano lessons it is essential to consider the relationship between the aspects that constitute pupils' psycho-physical selves - the mental, attitudinal, and physical aspects. The present study will address this relationship in Chapter 8.

Chapter 7

Looking for Changes in Performance in each Pupil

Introduction

This chapter looks at the difficulties and changes in the piano pupils' performance. Four categories of changes in their performance were established: 'evident improvements in performance', 'no evident improvements in performance', 'worsening in performance', and a 'special case'. Each one of them is presented in a separate section, which includes the assessments of the pupil's performances and subsequent changes. Possible explanations for such changes are offered in a separate, fifth section. A final sixth section seeks to provide a summary and conclusion for this chapter.

The piano pupils who participated in this research were young and recreational amateurs pianists. Thus they were not expected to provide great performances, but offered to the observers the opportunity to examine their abilities and difficulties, which may coincide with the ones presented by any piano student. Although the observers had the criteria for observation to help their assessments on the pupils' performances, their observations were based on their personal experiences, musical values, conceptions, and expectations. The piano teachers and the researcher saw the learning process that the pupils experienced throughout the experiment. The members of the panel of piano teachers also saw the pre-tests and the post-tests at the end of the experiment; some of

them did not say much about their own pupils, as they wished to know the opinions of the other piano teachers. The independent observers only saw the pre-and post-test performances, so they had a more critical view of the performances *per se*. The Alexander teacher did not provide many written comments on the performances of the pupils in the experimental group, as they rarely played the piano in the Alexander lessons, and she did not have the opportunity to see the tests.

The pupils' piano performances were the aspect that provoked more dissonance among the observers. As Daniel (2001: 216) states, 'music academics have participated as examiners in performance assessment panels and thus recognize that rarely does the final result come easily or unanimously'. Besides, as Mills (1991: 175) states, 'all assessment is subjective, in the sense that human beings determine how it is done'. However, overall, the observers had a common concern: they complained that many pupils did not present expressive performances, and called attention to the problem of lack of musical understanding. Later, in this chapter, this problem will bring us back to the definitions of piano technique presented in Chapter 1.

It is also important to emphasise that, many times, the observers did not manifest their opinions on pupils' performances because they did not notice evident changes in performance, or because they were concerned with the other two aspects included in the criteria for observation (pupils' physical conditions and attitudes). For this reason, the piano teachers' and the researcher's written observations ('teachers' observation form', baseline period) have been mostly used in this chapter to show the pupils' initial performing conditions.

The five elements of performance included in the original criteria for observation - ability to monitor performance, tone quality, rhythm quality, phrasing, and dynamics - were enriched by sub-elements. Although not all pupils used the sustaining pedal, this element was added, as some observers commented on this topic. Table 7.1 (next page) summarises the enriched criteria for observation with regard to the pupils' performances.

Table 7.1 Categories of problems in performance presented by piano pupils

Ability to monitor performance - *overall ability to control one's own performance and communication to listeners.*

- Inability to listen to oneself playing.
- Inability to control mistakes.
- Inability to control anxiety and nervousness.
- Inability to follow the piano teachers' instructions.
- Slow response to the teacher.
- Lack of willingness to play.
- Lack of awareness concerning oneself's playing.
- Personal and musical immaturity
- Lack of attention to musical details.
- Lack of patience to learn new pieces.
- Inability to share the performance with listeners.
- Lack of involvement with performance.
- Lack or excess of criticality.

Tone quality - *qualities related to the production of sound on the piano.*

- Stiff tone quality.
- Heavy tone quality.
- Shallow tone quality.
- Difficulty in transmitting musical character through the sounds.

Rhythm quality - *overall ability to control the rhythm.*

- Lack of control of the pulse.
- Lack of rhythmic control or rhythmic imprecision.
- Inability to execute changes in tempo (rallentando, accelerando, rubato).
- Lack of continuity.
- Bad execution of rests (long, short).
- Rushing the tempo.
- Missing the rhythm because of mistakes.

Phrasing - *ability to execute and communicate to listeners musical phrases.*

- Inability to articulate phrases through gestures, adequate touch, and dynamics contrasts and nuances.
- Careless execution of phrasing.
- Note-by-note or mechanical playing.

Dynamics - *ability to execute and communicate musical dynamics to listeners.*

- Inability to execute dynamic contrasts (*pp, p, mf, f, ff*).
- Inability to execute dynamic nuances (crescendo, decrescendo).
- Careless execution of dynamics.
- Artificial dynamics.

Bad pedalling - *inability to coordinate pedal change (sustaining pedal).*

- Anticipation of change of pedal.

7.1 Evident improvements in performance

According to the participants, evident improvement in performance was shown by the following five piano pupils in the experimental group: Daniel (experimental group 3), Bob (experimental group 4), Ivy (experimental group 8), Glenda (experimental group 9), and Hugh (experimental group 10). Two pupils in the control group also showed performing improvements: Adam (control group 1) and Ed (control group 5).

7.1.1 Evident improvements in performance in five pupils in the experimental group

Daniel (experimental group 3), Bob (experimental group 4), Ivy (experimental group 8), Glenda (experimental group 9), and Hugh (experimental group 10).

7.1.1.1 Daniel, experimental group 3 - CD Rom 1, table 7.2

Daniel used to follow well his piano teacher's instructions. He was endowed with good reading and listening abilities. He had a very good sense of rhythm. He was considered to be tense, as mentioned in Chapter 5. Probably for this reason, he had a stiff tone quality. However, sometimes Daniel's tone quality was fragile, due to bad hand position and bad finger technique (excessive finger articulation). His difficulty in achieving a better tone quality was also associated with his difficulty in transmitting musical character through the sounds. He did not execute phrasing and dynamics well, but attended only to pay attention to the rhythm and notes, perhaps because of lack of musical understanding. In sum, Daniel presented a mechanical, note-by-note performance in his pre-test performance.

Daniel had evident performing improvements. In the post-test, the quality of his tone was much better. His rhythmic precision and dynamics also improved. Daniel played more fluently, presented a better understanding of phrasing, and seemed to be more involved with the music. In the piano teachers' panel, teacher A suggested that he had very good musical potentialities, whilst teacher C believed that Daniel was playing easily and securely, and showed musical improvements due to his improvements in posture and hand position. Besides, as Alexander panel member A stated:

> …in the second one [post-test] …I felt that he was getting the notes related to one another better.

Table 7.2 Evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Daniel experimental group 3	**1. Good ability to monitor performance** - *teacher C researcher*	
	2. Bad tone quality - *teacher C* → Improved tone quality - *teacher C researcher*	
	- Stiff tone quality - *teacher C researcher*	
	- Shallow tone quality - *researcher*	
	- Difficulty in transmitting musical character through the sounds - *teacher C*	
	3. Very good rhythm quality - *teacher C researcher* → Improved rhythm precision - *teacher C researcher*	
	4. Bad phrasing - *teacher C researcher* → Better understanding of musical phrasing - *musicians D, E*	
	- Note-by-note, mechanical performance - *Alexander A musicians B, D, E teachers C, F* → More fluency - *Alexander A musicians D, E*	
	5. Bad dynamics - *teacher C researcher* → Improved dynamics - *teacher C researcher*	
	- No good dynamic contrast - *teacher C*	**Overall improvement in performance** - *musicians A, B, C*
	Good reading - *teacher C*	**More involvement with the music** - *teacher A*
	Good listening abilities - *teacher C*	

7.1.1.2 Bob, experimental group 4 - CD Rom 1, table 7.3

In the pre-test, the performance situation seemed to be really difficult for Bob. He had difficulty in concentrating and in executing what his piano teacher required, making constant and repeated mistakes. He also had difficulties with rhythm. Phrasing and dynamics were not well executed. His anxiety and embarrassment influenced his performance negatively. His tone quality was good, though.

Table 7.3 Evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Bob experimental group 4	**1. Difficulty in monitoring performance** - *Alexander A, teacher A, researcher*	→ Improved ability to monitor performance - *teacher A, researcher*
	- Careful performance - *teachers A, B, C*	- Better control of the performance situation - *researcher*
	- Special involvement with music - *Alexander B, teacher D*	- Less concern with mistakes and improved control of them - *researcher*
		- More awareness and willingness to perform - *musician F, teacher A*
		- Listening more to his own performance - *Alexander A*
		- More maturity - *musician F*
	2. Good tone quality - *teacher A, researcher*	→ Improved tone quality - *teacher A, researcher*
		- Uniform tone quality - *researcher*
	3. Difficulties with rhythm - *teacher A, researcher*	→ Improved rhythm control - *teacher A, researcher*
	4. Bad phrasing - *teacher A, researcher*	→ Better understanding of musical phrasing - *musicians D, E*
	- Note-by-note, mechanical performance - *musicians D, E*	→ More fluency - *musicians D, E*
	5. Bad dynamics - *teacher A, researcher*	
		Overall improvement in performance - *Alexander D, musicians D, E, teacher A, researcher*
		Divergent opinion: - No evident improvements in performance - *teachers B, D*

In the post-test, Bob was able to monitor and control his performance well, being patient with his own mistakes, and able to listen to his own performance, in the post-test. He seemed to be aware of what he needed to do to play nicely. His control of rhythm had improved. Bob was able to articulate the musical phrases with bodily gestures and produced a uniform and fluent sonority, although without much dynamic contrast. He was also able to produce a beautiful ending in one of the pieces, in *pp,* and with some *rubato* (CD Rom 1, piece a). The panel of piano teachers found that:

Teacher D - He seems to have a special involvement with music.

Teacher B - I noticed this as well. He is trying to do things [physical gestures] appropriate to the music.

Teacher D - Yes, I mean this kind of care.

Teacher A - In fact, he is not careless. He has difficulty in playing.

Teacher F - It seems that this boy is mature in some respects, in terms of consciousness.

However, two observers, teachers B and D, did not recognise great musical improvements in Bob's post-test performance.

7.1.1.3 Ivy, experimental group 8 - CD Rom 2, table 7.4

In the pre-test, Ivy was able to monitor her performance well, but did not execute what her teacher required immediately, making many mistakes. She was able to correct mistakes in rhythm after listening to her teacher's demonstration, but she had some lack of rhythm control. Her tone quality was good, although shallow. Phrasing and dynamics were not always clearly executed. Occasionally bad pedalling also appeared in her playing.

Table 7.4 Evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Ivy experimental group 8	**1. Good ability to monitor performance** - *teacher E researcher*	Improved ability to monitor performance - *teacher E researcher*
	- Slow response to the piano teacher's requirements - *researcher*	- Very musical - *Alexander D researcher*
		- Improved control of mistakes - *researcher*
		- Better control of the performance situation - *musician A teachers D, E*
		- More musical maturity - *musicians A, D, E teacher D*
	2. Good tone quality - *teacher E researcher*	Improved tone quality - *Alexander B*
	- Shallow tone quality - *teacher E researcher*	
	3. Difficulties with rhythm - *teacher E researcher*	Very good rhythm control - *teacher E researcher*
	- Some lack of rhythm control - *researcher*	- More fluency - *Doctor A*
	4. Reasonable phrasing - *teacher E researcher*	Improved articulation of phrases - *Alexander D teacher D researcher*
	5. Reasonable dynamics - *teacher E researcher*	Improved dynamics - *researcher*
	- Lack of dynamic contrast - *Alexander A*	- Dynamic contrasts - *teacher D researcher*
		- Dynamic nuances - *teachers C, D, E researcher*
	6. Occasional bad pedalling - *researcher*	
	Divergent opinions:	**Overall improvement in performance** - *musicians A, C, E researcher*
	- Facility in executing dynamics: *Doctor A* and phrasing	**Improved musical understanding** - *teacher D*

Ivy showed evident musical progress in the post-test. She now appeared to be very musical and had a better control of the performance situation, dealing well with her mistakes. She also showed musical maturation and an improved musical understanding. Her tone quality was good and clear. Alexander panel member B tried to find explanations for Ivy's improved tone quality in her post-test performance by establishing a relationship between tone quality and posture:

> When pupils are so poised, the sound is always richer. There are more harmonics...It is clear that there is a difference in the sound, although I am not sure if it is because the piano is much better, much, much better [the piano was not tuned in the pre-test and was tuned in the post-test].

Besides, Ivy's rhythm control was very good and she played more fluently. She was able to articulate and conduct the musical phrases well, producing very good dynamic contrast and nuances.

7.1.1.4 Glenda, experimental group 9 - CD Rom 2, table 7.5

Glenda presented very good piano performances throughout the experiment. She was able to execute well the piano teacher's instructions. She also had very good rhythm control and produced a good tone quality. Her phrasing and dynamics improved when the piano teacher requested. The use of the sustaining pedal was not totally precise, as she, many times, changed it too late.

In the post-test recording, Glenda was slightly nervous and shaky, but she was able to control the performance well, playing calmly and expressively, and producing a homogeneous and more grounded quality of tone. According to many observers, her performance was musically better, and she improved her understanding of the musical character of the pieces which she was playing. Glenda's pedal coordination improved. Examples of the observers' impressions of Glenda's post-test performance are:

> Glenda obtained the profundity that this music needs (musician E).

> Well, the music was there in the second time [post-test]...compared to the first time [pre-test] (Alexander panel member A).

Even the sound, was …more composed; …the sound was beautiful (Alexander panel member B).

Table 7.5 Evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Glenda experimental group 9	**1. Very good ability to monitor performance** - *teacher D researcher*	Improved ability to monitor performance - *teacher D researcher*
	- Quick response to the piano teacher's requirements - *researcher*	- Very good control of nervousness - *teacher D researcher*
	2. Good tone quality - *teacher D researcher*	Improved tone quality - *Alexander B musicians D, E researcher*
	3. Very good rhythm - *teacher D researcher*	
	4. Good phrasing - *teacher D researcher*	Slight improvement in continuity of phrasing - *Alexander A, D*
	- Note-by-note playing - *Alexander A, D*	
	5. Good dynamics - *teacher D researcher*	
	6. Occasional bad pedalling - *researcher*	Improved control of pedal - *musician D researcher*
		Overall improvement in performance - *Alexander A, C musicians D, E teacher D researcher*
		Improved musical understanding - *musicians D, E*
		Expressive performance - *teacher D*

7.1.1.5 Hugh, experimental 10 - CD Rom 2, table 7.6

Hugh monitored his performance well and had a good sense of rhythm. He was able to make some differentiation of dynamics, and articulated the musical phrases through dynamics and changes in tempo, producing good *rallentando* at the end of the musical

phrases. In both pre-and post-tests Hugh presented a tense and heavy tone quality, probably because of his excessive bodily tension, and also because of his excessive grounding, as highlighted in Chapter 5. To illustrate this problem, Alexander panel member A said that 'he does not find the lightness of the music'.

Table 7.6 Evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Hugh experimental group 10	**1. Good ability to monitor performance** - *teacher D, researcher* → Improved ability to monitor performance - *teacher D, researcher* - Quick response to the piano - *researcher* teacher's requirements	
	2. Bad tone quality - *teacher D, researcher* → Improved tone quality - *Alexander B, C* - Tense and heavy tone quality - *researcher*	Divergent opinion: tense, heavy and too grounded tone quality in both pre-and post-test performances - *Alexander A, musicians D, E, researcher*
	3. Very good rhythm - *teacher D, researcher*	
	4. Good phrasing - *teacher D, researcher* → Improved phrasing articulation - *teacher D, researcher* - Good phrasing articulation - *researcher* - Good *rallentando* - *researcher*	
	5. Good dynamics - *teacher D, researcher* - Good dynamic contrasts - *researcher*	**Overall improvement in performance** - *Alexander D, teachers C, D, E, researcher* **Improved musical understanding** - *musicians D, E* **Good communication of musical intention** - *teachers D, E* **More involvement with the performance** - *teacher C*

Nonetheless, in the post-test performance, Hugh maintained his musical qualities; his musical progress was evident to many observers. He improved his ability to monitor his performance, being more involved with it, producing a better tone quality and clear dynamic contrasts, and articulating the musical phrases well, with good *rallentando* at the end of the phrases. He gave the impression that he had practised the pieces at home. Besides, he showed that he was aware of what he was doing, and able to execute his

musical intentions well, as the piano teachers emphasised in the panel of piano teachers:

> *Teacher E:* It is possible to recognise his musical intention.
>
> *Teacher D:* His musical intention is real; it exists.

7.1.2 Improvements in performance in two pupils in the control group

Adam (control group 1) and Ed (control group 5).

7.1.2.1 Adam, control group 1 - CD Rom 1, table 7.7

Adam was able to follow well his piano teacher's instructions. He had very important abilities, such as good memory, good technical-motor abilities, and good control of the pedals. In the pre-test, he presented good tone quality, and very good rhythm sense, but he needed to be more aware of musical details, such as melodic movement, phrasing, and dynamics.

Adam's post-test revealed that his understanding of phrasing had improved, as he was able to articulate and conduct the musical phrases better. Overall, his performance was musically better and more refined, especially in terms of tone quality and dynamics. The music was flowing better, and he was able to execute some changes in tempo (*rallentando*). He was musically more mature, and gave the impression that he practised at home.

There was some disagreement among participants concerning Adam's musical improvements. Some observers found that in both pre-and post-test Adam was not

involved with his performance, making the same mistakes and restricted movements. Additionally, some observers were not satisfied with Adam's phrasing and dynamics in both performances.

Table 7.7 Evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Adam control group 1	**1. Very good ability to monitor performance** - *teacher A researcher*	Improved ability to monitoring performance - *teacher A researcher*
	- No attention to musical details - *teacher A researcher*	- More patience with mistakes - *researcher*
	- Special involvement with music - *Alexander B teacher D*	- More maturity - *musicians A, B, E*
	2. Very good tone quality - *teacher A researcher*	More refined tone quality (softer) - *Doctor B musician B teacher A*
	3. Very good rhythm sense - *musician B teacher A researcher*	Improvements in tempo - *musicians D, E*
	4. Reasonable phrasing - *teacher A researcher*	Improved phrasing - *musician D teacher A researcher*
	- Note-by-note, mechanical playing - *musician A*	- Better phrasing articulation and conduction - *teacher A researcher*
		- More fluency - *Alexander A Doctor B*
	5. Reasonable dynamics - *teacher A researcher*	Improved dynamics - *Alexander B, C musicians D, E teacher A researcher*
	6. Good pedalling - *musician D*	
		Overall improvement in performance - *Doctor A musicians D, E teacher A researcher*
		Improved musical understanding - *researcher*
		Good practice at home - *Alexander D*
	Very good memory - *researcher*	**Opposite views:**
	Good technical-motor abilities - *musicians A, B*	- No involvement with performance, and restricted movements - *musician D*
		- The same mistakes - *musician E*
		- No improvement in phrasing and dynamics - *musicians A, B teachers A, D*

7.1.2.2 Ed, control group 5 - CD Rom 1, table 7.8

Ed was able to play musically throughout the entire experiment. He was always able to follow his teacher's instructions, and seemed to be aware of what he was doing. He coped with his mistakes well. For instance, in the pre-test performance (Seresta by Guerra Peixe, CD Rom 1, piece a), by mistake, Ed repeated the second musical phrase as if it were the first one; but he did not stop his performance because of this. Ed had good tone quality, though eventually slightly shallow; and very good rhythm control. He was able to articulate and conduct the musical phrases well, which denotes good musical understanding. He also executed clear dynamic contrast and subtle dynamic nuances. His use of the pedals was very good. He had 'good ears', and was becoming more autonomous, practising the pieces at home. However, in the pre-test performance, Ed gave Alexander panel member A the impression that:

> …he…is keeping [the music] all for himself, "Go away, leave me alone, I am playing"!

Even though Ed was uncomfortable with the recording, in the post-test, according to many observers, his musical performance improved. He maintained his initial musical qualities, and showed a clear musical intention and musical understanding of the pieces. His music making was more fluent, as he was able to play faster. The articulation and conducting of the musical phrases improved.

Ed's post-test performance 'was more like dancing', said musician D. His tone quality also improved. He was more mature musically, sharing his music with listeners. He also had a better command of the pieces, as he had been practising at home. However, one observer, Doctor A, hardly noticed any difference between his pre-and post-test performances.

Table 7.8 Evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Ed control group 5	**1. Very good ability to monitor performance** - *teacher D researcher*	Good ability to monitor performance, although nervous because of the recording - *teacher D*
	- Quick response to the piano teacher's requirements - *researcher*	- Overcoming difficulties well - *teacher F*
	- Awareness of his playing - *researcher*	- More musical maturity - *musicians A, B, C, E teacher C*
	- Managing mistakes very well - *researcher*	- Better musical communication with listeners - *Alexander A*
	- Restrict musical communication to listeners - *Alexander A*	- Better command of the piece - *musicians B, C, E*
		- More familiarity with the piece - *Alexander C*
	2. Good tone quality - *teacher D researcher*	Improved tone quality - *teacher C*
	- Occasional shallow tone quality - *researcher*	
	3. Very good rhythm sense - *teacher D researcher*	More fluency - *Alexander C Doctors B, C musician B, C*
	4. Very good phrasing - *teacher D researcher*	Improved understanding of musical phrasing - *musician D teachers C, F researcher*
	5. Very good dynamics - *teacher D researcher*	**Overall improvement in performance** - *Alexander B, C, D musicians D, E teacher D researcher*
	- Clear dynamic contrasts and nuances - *researcher*	**Improved musical understanding** - *teacher D researcher*
	6. Very good pedalling - researcher	**Good practice at home** - *Alexander B, C, D*
	Good audition - *teacher D*	**Opposite opinions:**
	Good autonomy and practice at home - *teacher D*	- No evident improvements in performance - *Doctor A*
	Good musical understanding - *researcher*	

Table 7.9 Summary of pupils with evident improvements in performance

Experimental Group	Control Group
Daniel (experimental 3) Bob (experimental 4) Ivy (experimental 8) Glen (experimental 9) Hugh (experimental 10)	Adam (control 1) Ed (control 5)

7.2 No evident improvements in performance

Four pupils in the experimental group - Alan (experimental group 1), Conor (experimental group 2), Ella (experimental group 5), and Frank (experimental group 6) - did not present evident improvement in performance. Five pupils in the control group did not improve their performances either: Dora (control group 3), Joe (control group 7), Iris (control group 8), Greg (experimental group 9), and Henry (control group 10).

7.2.1 No evident improvements in performance in four pupils in the experimental group

Alan (experimental group 1), Conor (experimental 2), Ella (experimental group 5), and Frank (experimental group 6).

7.2.1.1 Alan, experimental group 1 - CD Rom 1, table 7.10

In the pre-test, Alan's piano performances were careless, without involvement or commitment. The observers did not notice evidence of clear musical understanding, and

his execution of phrasing and dynamics was poor. As stated in Chapter 6, he was eager to play the pieces without knowing them well. However, Alan was musical, and had good rhythmic sense and a good tone quality.

Table 7.10 No evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Alan **experimental group 1**	**1. Difficulty to monitor performance** - *Alexander A teacher A researcher* - Careless - *teacher A researcher* - Rushed to play pieces without knowing the note - *teacher A* - No involvement with performance - *researcher* - Lack of commitment to performance - *researcher* **2. Good tone quality** - *teacher A researcher* **3. Good rhythm** - *teacher A researcher* - Rhythmic imprecision due to anxiety about playing and lack of care - *researcher* **4. Bad phrasing** - *teacher A researcher* - Note-by-note, mechanical performance - *Alexander B, C* **5. Bad dynamics** - *teacher A researcher* → No improvement in dynamics - *musicians D, E* **Lack of musical understanding** - *researcher* **Very good musicality and musical potential** - *musicians A, B*	- Careless with performance - *teachers A, B, C* - Inability to listen to his own performance - *teacher A* - No involvement and enthusiasm with performance - *musicians A, D, E* - Insecure performance - *musician A* **Divergent opinions:** - Improved phrasing - *Alexander A* - Improved attitude towards performance - *Alexander D* **No musical refinement** - *Doctor A* **Inability to express musical intention** - *musicians D, E* **Technical difficulties** - *musician B* **Lack of automatisation** - *musician B*

In the post-test, Alan knew the pieces better, but did not automatise the pieces well, still presenting some technical difficulties. There was no musical refinement, but a lack of

involvement with the music and inability to express musical intentions and the dynamic contrasts. Some observers emphasised his careless way of playing and his inability to listen to his own playing. Overall, he did not change his musical performance in any evident way. However, in his post-test performance, some observers recognised that Alan was a very musical pupil, with good musical potential. Alexander panel member A was the only observer that found his phrasing better in the post-test.

7.2.1.2 Conor, experimental group 2 - CD Rom 1, table 7.11

Conor was not motivated to play the piano, as mentioned in the previous chapter. Perhaps for this reason he did not care about monitoring his performances well, and did not execute phrasing and dynamics correctly. His tone quality and rhythmic sense were good.

Table 7.11 No evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Conor experimental group 2	**1. Reasonable ability to monitor performance** - *teacher B researcher* →	Improved ability to monitor - *researcher* performance - More maturity - *teachers A, B, D* - Technical improvements - *teachers A, B, D*
	2. Very good tone quality - *teacher B researcher* →	Improved tone quality - *Alexander C, D*
	3. Very good rhythm sense - *teacher B researcher* →	More fluency - *musicians D, E*
	4. Very good phrasing - *teacher B* - Poor execution of phrasing - *researcher*	
	5. Very good dynamics - *teacher B* - Poor execution of dynamics - *researcher*	**Divergent opinions:** - No evident performance improvements - *Alexander D teachers A, B, C researcher* - Worsening in performance - *musicians D, E*
	Very good musicality - *Alexander A teachers A, B, C, D, E, F researcher*	

Conor was able to control his performance well in the post-test performance, as he was attentive and calm. Some observers found that Conor did not show any evident performing improvement. Two observers found that Conor's post-test was worse than his pre-test. No musical intention or musical expression was noticeable. Conor was 'listening to music in a very punctuated way, note by note', said Teacher D (panel of piano teachers). He was apart and not involved with his own performance. According to Alexander panel member B,

> ...in the first one [pre-test], the sound is much better. In the first one he is really enjoying it. In the second [post-test] he is not involved, he is less himself.

7.2.1.3 Ella, experimental group 5 - CD Rom 1, table 7.12

Ella had one finger broken at the beginning of the experiment. For this reason, in the pre-test, she played Bach's Invention in C Major with the right hand only. This allowed the observers to notice that she was not internally listening to the musical events that should be played by the left hand, as she did not wait for the right time to play the next musical phrase in the right hand. However, Ella was able to monitor her performance reasonably well, managing to correct her own mistakes. She had good tone quality and rhythmic sense, but showed a lack of musical understanding, and did not execute well phrasing and the contrasts in dynamics.

Ella continued playing the notes without being musically expressive in the post-test performance. Her performance was considered discontinuous, monotonous and without dynamic contrasts, or clear articulation of phrasing. Ella did not seem to have understood the polyphony she was playing (Bach, C Major Invention), as she continued not listening to her own playing. Additionally, she did not seem to be involved with the music. On the other hand, some observers pointed out Ella's positive musical achievements. She had a beautiful *cantabile* and finished the pieces well, with good *rallentando*. Ella had good musical potential.

Table 7.12 No evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions	Performing changes
Ella experimental group 5	**1. Good ability to monitor performance** - *teacher D researcher* - Good ability to correct mistakes - *researcher* - Lack of ability to listen to one's performance - *musician D teacher D* - Lack of involvement with the pieces - *Alexander A, D Doctor A teacher D* - Lack of awareness - *Alexander D* **2. Good tone quality** - *teacher D researcher* → Beautiful *cantabile* - *musician B* **3. Good rhythmic sense** - *teacher D researcher* - Lack of continuity - *Doctor A* **4. Bad phrasing** - *teacher D researcher* - Note-by-note, mechanical performance - *musicians D, E teacher B* **Lack of musical understanding** - *musicians D, E teachers B, D researcher* **Lack of musical expressiveness** - *teacher D researcher* **Monotonous performances** - *musician D* **Finishing the pieces well** - *Doctor A* **Good musical potentiality** - *musician A*	**Lack of musical understanding (no understanding of polyphony)** - *musician D teacher D* **Knowing the pieces better in the post-test** - *Alexander D*

7.2.1.4 Frank, experimental group 6 - CD Rom 2, table 7.13

Frank was able to follow well the teacher's instructions and had a critical view of his own playing and good listening ability, recognising what he did not execute well. He was also able to continue performing, even with mistakes. He had a very good sense of

rhythm and good tone quality. He seemed to have very good musical understanding, but was not always able to execute phrasing and dynamics well.

In the post-test, Frank seemed to be musically more mature. Nonetheless, he did not achieve what some observers expected from him, as many recognised his potential to make significant improvements in his performance. For instance, musician D said that:

> He has all the physical conditions to do it better. He has musical abilities and flexibility of movement.

And his piano teacher, teacher D, claimed that:

> Frank was able to make musical nuances that did not appear in the recordings.

Musician E offered the following comment:

> He certainly controlled the material aspect of the piece much better in the post-test performance. I noticed a change of gesture; his arms were more flexible. I saw a postural improvement, and improvement in the potentiality to make music. But still, musically it is not so alive. He is not expressing himself as well as he could.

The Alexander panel members, however, found that Frank's post-test performance was better:

Alexander member B: Very big difference. Musically. The sound is very different.

Alexander member C: And the sound was better.

Alexander member D: The difference in his playing is amazing!

Table 7.13 No evident improvements in performance - summary of pupils in the experimental group

	Initial performing conditions		Performing changes
Frank experimental group 6	**1. Very good ability to monitor performance**	- *teacher D researcher*	→ More maturity - *Doctor A*
	2. Good tone quality	- *teacher D researcher*	→ Improved tone quality - *Alexander B, C*
	3. Very good sense of rhythm	- *teacher D researcher*	
	4. Good phrasing	- *teacher D researcher*	
	- Oscillation between good and bad execution of phrasing	- *researcher*	
	5. Good dynamics	- *teacher D researcher*	
	- Oscillation between good and bad execution of dynamics	- *researcher*	
	Very good musicality and musical potential	- *musicians D, E teacher D researcher*	**Divergent opinion:** - Evident performing improvements - *Alexander B, C, D*

7.2.2 No evident improvements in performance in five pupils in the control group

Dora (control group 3), Joe (control group 7), Iris (control group 8), Greg (control group 9), and Henry (control group 10).

7.2.2.1 Dora, control group 3 - CD Rom 1, table 7. 14

Dora followed her piano teacher's instructions well. Her tone quality was good. No indication of clear musical understanding was observed, neither good execution of phrasing and dynamics. Dora had some discontinuity in her rhythm, as she could not

keep the pulse or execute rhythmic patterns precisely. Alexander panel member A illustrates Dora's difficulties with the following comment:

> [Pre-and post-tests] There was no sense of melody. She was very anxious about the rhythm. She was trying to make the rhythm and [she was] physically tensing herself up. In this one [post-test], she did the rhythm but not in her head.

Table 7.14 No evident improvements in performing - summary of pupils in the control group

	Initial performing conditions	Performing changes
Dora control group 3	**1. Good ability to monitor performance** - *teacher C researcher*	Improved ability to monitoring - *teacher C* performance
	- Lack of involvement with performance - *teacher D*	- More intimacy with the pieces - *Alexander B teachers B, F*
	2. Good tone quality - *teacher C researcher*	Improved tone quality - *musicians B, C*
		- Shallow tone quality - *researcher*
	3. Difficulties with rhythm - *teacher C researcher*	
	- Discontinuity due to lack of control of the pulse - *teacher C researcher*	
	4. Bad phrasing - *teacher C researcher*	
	- Note-by-note, mechanical performance - *Alexander B, C teacher D*	
	5. Bad dynamics - *teacher C researcher*	
	Lack of musical understanding - *musicians D, E teacher D researcher*	
	Difficulty in expressing her musicality - *musician E*	

According to the majority of observers, Dora did not present evident musical improvements in the post-test. She had some difficulty in expressing herself musically,

and seemed to be concerned about playing the right notes, not playing musically. Nevertheless, some observers indicated specific improvements in Dora's post-test, such as improved ability to monitor her performance and more intimacy with the piece. For two observers, her tone quality improved. For another, her tone quality was slightly worse.

7.2.2.2 . Joe, control group 7 - CD Rom 2, table 7. 15

Joe had a good ear for music and was able to identify his own mistakes, but usually his performances were careless. He missed rhythm patterns because of mistakes, and tended to accelerate the tempo, not executing long rhythmic patterns well. He did not perform the indicated phrasing or dynamics either. His quality of tone was usually good, but occasionally shallow. He tended to anticipate the change of the sustaining pedal.

In the post-test, Joe's sense of rhythm was very good, and he was attentive, but he played like a machine: careless in all respects, unaware of musical phrases, producing careless tone quality, and not executing dynamic contrasts or nuances well. His teacher wrote:

> Joe did not improve musically, as he had no patience to work on [musical] details (teacher F, piano lesson 8).

Some observers, however, were confused when watching Joe's tests. There was some disagreement among them concerning Joe's musical improvements. Two observers found that Joe played better in the post-test performance; he had better control of the sustaining pedal and his playing was more fluent. Another one said that he lost spontaneity in the post-test. What was equally emphasised by some observers was the lack of musical involvement and the indifference with which Joe played the pieces in both tests.

Table 7.15 No evident improvements in performance - summary of pupils in the control group

	Initial performing conditions	Performing changes
Joe control group 7	**1. Reasonable performance monitoring** - *teacher F researcher* - Careless playing - *researcher* - Good ears and ability to recognise mistakes - *teacher F* - Lack of involvement with music - *musicians E teachers A, D, F*	- Loss of spontaneity - *musician E*
	2. Good tone quality - *teacher F researcher* - Occasional shallow tone quality - *researcher*	
	3. Difficulties with rhythm due to anxiety and careless - *teacher F researcher* - Bad execution of long rests - *researcher* - Rushing the tempo - *researcher* - Missing the rhythm because of mistakes - *researcher*	→ Improved rhythm control - *researcher*
	4. Bad phrasing - *teacher F researcher* **5. Bad dynamics** - *teacher F researcher* **6. Pedallling problems** - *researcher* - Anticipation of change of pedal - *researcher*	→ Better control of the sustaining pedal - *musician D*

7.2.2.3 Iris, control group 8 - CD Rom 2, table 7.16

Iris seemed to be a very musical pupil. She was able to improve her performance according to her piano teacher's orientation. She was also able to monitor her performance well, coping with mistakes. Still, her performances were oscillating in all respects: her tone quality was good, but sometimes shallow. Similarly, her rhythmic

control was usually good, but some times imprecise. She finished the musical phrases well, but did not articulate them clearly. She usually executed dynamics well.

Table 7.16 No evident improvements in performing - summary of pupils in the control group

	Initial performing conditions		Performing changes	
Iris control group 8	**1. Good to monitor performance** - teacher E researcher	→	Improved ability to monitor performance - *teacher A researcher*	
	- Good ability to follow the teacher's instructions - *researcher*			
	- Good control of mistakes - *researcher*			
	2. Reasonable tone quality - *teacher E researcher*	→	Improved tone quality - *Alexander B, C*	
	3. Reasonable rhythm control - *teacher E researcher*			
	4. Reasonable phrasing - *teacher E researcher*			
	- Note-by-note, mechanical performance - *Alexander A musicians A, B, C*			
	5. Good dynamics - *teacher E researcher*			
	Very good musicality - *Doctor A teacher E researcher*			
	Motor coordination problems - *musicians A, B, C*			
	Lack of awareness of musical details - *musicians C, D*			

Iris did not present musical improvements, according to the comments offered by the majority of observers. Some found Iris's pre-and post-test performances mechanical, without good coordination of the hands movements, as Iris's left hand was playing faster than her right hand. She did not seem to be aware of musical details. Nonetheless, two observers said that her tone quality was better, in the post-test.

7.2.2.4 Greg, control group 9 - CD Rom 2, table 7.17

Greg had very good musical abilities and potential. He followed the piano teacher's instruction carefully, had good control of his performances, and had a very good rhythmic control.

Table 7.17 No evident improvements in performance - summary of pupils in the control group

	Initial performing conditions	Performing changes
Greg control group 9	**1. Good ability to monitor performance** - *teacher D researcher* - Concentrated, mature, and conscious - *musician A* - Careful performances - *musicians B, D, E* - Good execution of the music's character - *musician D*	
	2. Reasonable tone quality - *researcher*	→ Worsening in tone quality - *musicians D teacher F*
	- Slightly stiff tone quality - *researcher*	
	3. Very good rhythm control - *teacher D researcher*	→ Improved precision of rhythm - *musician E*
	4. Good phrasing - *teacher D*	→ Beautiful endings of phrases - *researcher*
	- Note-by-note, mechanical performance - *Alexander A researcher* - Improvement in phrasing in the lessons - *researcher* - Preparing the endings of the phrases well - *musicians B, D, E*	
	5. Good dynamics - *teacher D*	
	- Artificial dynamics - *researcher*	→ Improved dynamics - *researcher* (homogeneous dynamics and clear accentuations)
	- Improvements in dynamics in the lessons - *researcher*	
	Very good musical potential - *teacher D researcher* **Spontaneity** - *Alexander C musician D* **Playing nicely and good communication with listeners** - *Doctor A Alexander A, B, C, D musician A*	

Greg's tone quality was slightly stiff. He tended to play note-by-note. His dynamics were occasionally executed in an artificial way, as he exaggerated the dynamic effects. But he was able to improve phrasing and dynamics many times in the piano lessons. To his piano teacher (teacher D), Greg was a very good pupil; she gave him scores between 'good' and 'very good' for all items of performance (teachers' observation form - baseline period).

Some observers pointed out slight differences between Greg's pre-and post-test performances. Their observations were contrasting. For some, Greg played very nicely in both pre-and post-tests, as he was concentrated, mature, and aware of what he was doing. He was also careful, preparing the endings of the musical phrases well. For one observer, in the pre-test Greg was more faithful to the musical character of the pieces, and more spontaneous; in the post-test his rhythm was more precise. Others found that his tone quality was worse in the post-test. But for one observer he executed beautiful musical details, such as correct accentuations and homogeneous dynamics, instead of making strong contrasts

7.2.2.5 Henry, control group 10 - CD Rom 2, table 7.18

Henry seemed to have bad control of his performances, making many mistakes, and having some difficulty in following his piano teacher's suggestions. His sense of rhythm was good, but when he was learning new pieces, other difficulties, such as bad motor coordination, led him to have rhythmic problems. As he was tense, his tone quality was slightly stiff. Usually he did not execute phrasing and dynamic contrasts well.

Henry did not show evident improvements in performance, throughout the experiment and in the post-test performance. He showed better control of the materials, although he still presented difficulties in coordinating his hands.

Table 7.18 No evident improvements in performance - summary of pupils in the control group

	Initial performing conditions	Performing changes
Henry control group 10	**1. Some difficulty in monitoring performance** - *teacher D researcher* - Bad control of performance - *researcher* - Difficulty in following the teacher's instructions - *researcher* - Many mistakes - *researcher* **2. Reasonable tone quality** - *teacher D researcher* - Slightly tense tone quality - *researcher* **3. Good rhythmic sense** - *teacher D researcher* **4. Reasonable phrasing** - *teacher D* - Bad phrasing - *researcher* - Note-by-note, mechanical performance - *Alexander A* **5. Reasonable dynamics** - *teacher D* - Bad dynamics - *researcher*	→ Improved ability to control performance - *musicians D, E* **No evident improvements in performance** - *Doctor B Alexander D musicians D, E researcher*

Table 7.19 Summary of pupils with no evident improvements in performance

Experimental Group	Control Group
Alan (experimental 1) Conor (experimental 2) Ella (experimental 5) Frank (experimental 6)	Dora (control 3) Joe (control 7) Iris (control 8) Greg (control 9) Henry (control 10)

7.3 Slight worsening in performance

Two piano pupils in the control group had worsening in performance, according to the observers' comments: Ben (control group 4) and Flora (control group 6).

7.3.1 Slight worsening in performance in two pupils in the control group

7.3.1 Ben, control group 4 - CD Rom 1, table 20

To the majority of observers, Ben had great musical abilities. He was able to follow the teacher's instructions without any problem, showing clear musical intentions, and was able to execute phrasing and dynamics very well. Ben had very good tone quality and rhythmic sense, apart from his tendency to accelerate the tempo, which created some discontinuity in his performances (researcher, baseline period). To his piano teacher, Ben was an excellent pupil in all respects, although he was still musically too immature to execute phrasing and dynamics perfectly (teacher A, baseline period).

Listening to the pre-and post-tests, Ben's piano teacher said that he was not motivated to play that specific piece, so he did not pay attention to its musical details. Besides, in the post-test performance, Ben had to take off his shoes because they were producing a noise on the pedals (Teacher A, panel of piano teachers - see CD Rom 1, piece a). Perhaps these problems explain why Ben's performance seemed to be slightly worse to some observers, in the post-test. They suggested that his performance was less flexible, and that he did not finish the musical phrases well. Besides, Ben's control of tempo did not improve, as he was accelerating a little. He did not execute the dynamic contrasts. Ben's slight worsening in performance was occasional, and did not change the observers' good impressions with regard to his musical qualities.

Table 7.20 Slight worsening in performance - summary of pupils in the control group

	Initial performing conditions	Performing changes
Ben control group 4	**1. Very good ability to monitor performance** - *teacher A researcher* - Carefulness, maturity, musical awareness - *Doctor A* - Demanding on himself - *teacher D*	
	2. Very good tone quality - *teacher A researcher*	→ Improved tone quality - *Alexander A*
	3. Very good sense of rhythm - *Alexander A teacher A researcher* - Slight tendency to accelerate - *researcher* tempo	→ Tendency to accelerate - *researcher* tempo
	4. Good phrasing - *teacher D* - Very good phrasing - *researcher*	→ Not finishing musical phrases so well as before - *musician D*
	5. Good dynamics - *teacher A* - Very good dynamics - *researcher*	→ No dynamic contrasts - *researcher*
	Very good musicality - *all observers* **Lack of motivation to play a specific piece** - *teacher A*	**Divergent opinions:** - Slight worsening in performance - *musicians D, E researcher* - No difference between pre-and post-tests - *teacher F* - Good performances in both pre-and post-tests - *Doctor A Alexander A, D musicians A, B, C researcher*

Other observers did not distinguish differences between Ben's pre-and post-tests, and found that both performances were good. Examples of their comments follow.

> Musically, he executed everything well. He was careful, mature, and aware of what he was doing (Doctor A).

He has a lovely musicality. He is really integrated. He doesn't jump on the beat. He has a...rhythm. He was including other people in his performance, which I think is very nice. He has a kind of generosity there, of giving himself (Alexander panel member A).

[He] is a very good player. This is already a very good performance [pre-test]. He has more sound on the second performance [post-test]. It is a better sound. He is wonderful (Alexander panel member D).

Musically, this boy is more demanding on himself than the others [pupils] (teacher D).

7.3.1.2 Flora, control group 6 - CD Rom 2, table 7.21

Flora did not execute phrasing and dynamics very well. Perhaps, for this reason, she was considered to be musically immature by her piano teacher (teacher D, baseline period). She had some difficulty in keeping the pulse, which caused lack of regularity and continuity in her playing, but she was able to improve her rhythm with her teacher's help. On the other hand, she presented a good ability to monitor performance and good tone quality.

Flora presented a worse performance in the post-test, according to some observers. She seemed not involved with music. Bad choice of fingering made it difficult for her to play safely in both pre-and post-tests. She was more insecure and nervous about playing in the post-test. Her phrasing and dynamics did not improve. But Flora made some musical improvements: she was able to execute a good *rallentando* and she did not show specific difficulties over rhythm. She also knew the pieces better.

Table 7.21 Slight worsening in performance - summary of pupils in the control group

	Initial performing conditions		Performing changes	
Flora control group 6	**1. Good ability to monitor performance**	*teacher D researcher*	→ Increased insecurity to play	*musician C*
	- Lack of involvement with performance	*Alexander A musician E*	- Nervousness	*researcher*
			- More comfortable when playing (knowing the pieces better)	*Alexander B*
	2. Good tone quality	*teacher A researcher*		
	3. Rhythm difficulties	*Alexander A teacher D researcher*	→ Rhythm improvement	*researcher*
			- Good *rallentando*	*researcher*
	- Difficulty in keeping the pulse	*researcher*	- More fluency	*Alexander C*
	4. Reasonable phrasing	*teacher D researcher*	→ Not finishing musical phrases so well as before	*musician D*
	- Note-by-note playing	*Alexander A*		
	5. Reasonable dynamics	*teacher D researcher*	→ No dynamic contrasts	*researcher*
	Bad fingering	*musicians A, B, C*	**Slight worsening in performance**	*musicians C, E teacher F researcher*

Table 7.22 Summary of pupils with slight worsening in performance

Control Group	
	Ben (control 4)
	Flora (control 6

7.4 Special cases

The opinions of the observers on the performances presented by Jill (experimental group 7) and Colin (control group 2) were conflicting. So they were considered to be special cases.

7.4.1 Jill, experimental group 7 - CD Rom 2, table 7. 23

Jill had a very good sense of rhythm, good and 'beautiful' tone quality, rhythmic fluency, and plenty of musicality.

Table 7.23 Special case - Jill (experimental group 7)

	Initial performing conditions		Performing changes	
Jill experimental group 7	1. **Bad ability to monitor monitor performance**	- *teacher F researcher*	→ Improved ability to monitoring performance - *teacher F researcher*	
			- More maturity - *musician E*	
			- Better control of musical materials - *teacher B*	
	2. Very good tone quality - *teacher F researcher*		→ Improved tone quality - *Alexander B teacher B*	
	- Beautiful tone - *researcher*			
	3. Very good sense of rhythm - *teacher F researcher*			
	4. Reasonable phrasing - *teacher D researcher*		**Divergent opinions:**	
	- Careless phrasing - *researcher*		Pre-test performance was more natural, with better pedal coordination - *musician D*	
	5. Reasonable dynamics - *musician E teacher F researcher*		The piece was played better and she was more involved with it in the pre-test - *Alexander C*	
	- Careless dynamics - *researcher*			
	Lack of musical understanding - *musicians D, E teacher D researcher*		Better control of musical materials and better pedal in the post-test - *musician E researcher*	
	Very good musicality and musical intuition - *researcher*		No difference between pre-and post-tests - *musicians A, B, C researcher*	

Jill's ability to monitor her performance was not so good, though. She was careless in the execution of phrasing and dynamics, perhaps because of lack of musical understanding or personal and musical immaturity.

The observers offered conflicting perceptions with regard to some aspects of Jill's performance in the post-test. Two observers enjoyed her pre-test performance more, judging that she played more naturally, with better pedal coordination and more involvement with the piece. Some observers liked Jill's fluent way of playing in both tests, but saw no evident musical improvement. For instance, her musical understanding and her execution of phrasing and dynamics did not improve much. But according to some observers, some aspects of her playing improved in the post-test: she had better monitoring of performance and control of musical materials and improved tone quality, producing a more dense sound.

7.4.2 Colin, control group 2 - CD Rom 1, table 7.24

Colin was considered to be a very musical pupil by many observers. He had some ability to monitor his performances. His execution of phrasing and dynamics was bad, but his tone quality and sense of rhythm were very good. His piano teacher (teacher B, baseline period) wrote that he was between 'good' and 'very good' in all these aspects.

According to two observers, Colin presented worsening in his performance in the post-test. They had the impression that the pre was the post-test and vice-versa. They said that, in the pre-test, Colin was more released, secure, and spontaneous, and had more energy to play the instrument, also executing dynamics better. On the other hand, these two observers agreed that Colin's performance was more fluent in the post-test. Other observers stated that he was more mature, made technical improvements, and was able to monitor his performance better in the post-test. But these observers did not recognise significant musical improvements in Colin's post-test performance.

Table 7.24 Special case - Colin (control group 2)

	Initial performing conditions	Performing changes
Colin control group 2	**1. Difficulty to monitor performance** - *Alexander A, teacher A, researcher*	→ Improved ability to monitoring performance - *teacher A, researcher*
		- More patience with mistakes - *researcher*
	- Careful performance - *teachers A, B, D*	
		- Better control of the performance situation - *researcher*
	- Special involvement with music - *Alexander B, teacher D*	
		- Less concern with mistakes and improved control of them - *researcher*
		- More awareness and willingness to play - *musician F, teacher A*
		- Listening more to his own performance - *Alexander A*
		- More maturity - *musician F*
	2. Good tone quality - *teacher A, researcher*	→ Improved tone quality - *teacher A, researcher*
		- Uniform tone quality - *researcher*
	3. Rhythmic difficulties - *teacher A, researcher*	→ Improved rhythmic control - *teacher A, researcher*
	4. Bad phrasing - *teacher A, researcher*	→ Better understanding of musical phrasing - *musicians D, E*
	- Note-by-note, mechanical performance - *musicians D, E*	→ More fluency - *musicians D, E*
	5. Bad dynamics - *teacher A, researcher*	**Overall improvement in performance** - *Alexander D, musicians D, E, teacher A, researcher*
		Divergent opinion:
		- No evident performing improvements - *teachers B, D*

The Alexander panel members, however, found that Colin's performance improved, as the comments below illustrate:

> *Alexander A*: He is quite musical. I mean, he has a sense of music. It had a musical energy [post-test] that this didn't have [pre-test].

Alexander B: …and he knows more what he is doing, within himself [in the post-test].

Alexander C: I think the second time [post-test] is a lot better, sound wise.

Alexander D: The sound, it was amazingly different. Wasn't it? Amazingly different. Because [in] this [post-test], it was kind of… on the surface. This was more grounded [post-test].

Table 7.25 Summary of special cases

Experimental Group	Control Group
Jill (experimental 7)	Colin (control 2)

7.5 Possible reasons for the pupils' improvements, lack of improvements, or worsening in performance

As the twenty pupils who took part in this study had been having piano lessons for some time, the observers would probably expect them to show improvements in performance. However, only seven pupils in both groups presented evident improvements, and the other thirteen had no evident improvements or worsening in performance. Factors exist which may explain why so many pupils did not improve their performances. In this section, these factors will be investigated, as well as the extent to which the Alexander Technique may have positively influenced pupils' piano performances.

7.5.1. Musical factors determining the presence or absence of improvements in performance and Alexander's view on this problem

Chapter 3 offered a discussion of the musical limitations and difficulties that may impoverish musicians' performances. Seven musical factors were mentioned: musical understanding, motivation, enculturation with the musical style, good grounding in musicianship, technical skills, practice, and maturation. Among them, the pupils' *lack of musical understanding* was the one most emphasised by the observers in this study, and which they believed to be a major cause for the pupils' absence of improvement in performing. They offered comments that illustrate this point. After watching the pupils' pre-and post-tests, Doctor A claimed:

> I said more things about their physical changes, because their musical changes were not so noticeable.

In the same vein, musician E made the following comment:

> I've been observing that the pupils' posture is evolving more than the musical aspect.

The lack of musical understanding observed in the performances of many piano pupils was discussed by the members of the panel of piano teachers, as teacher D's comment exemplifies:

> The pupils' concern is not a musical one; it is about playing the notes correctly. I don't know if we, as teachers, should pay more attention to this problem. I noticed the same problem with my pupils. I really don't know what to do with some of my pupils.

Musician A (panel of musicians) endorsed this position:

> Things must be more integrated. Children can play dó-ré-mi-fá-sol musically well [she sings, exemplifying a note-by-note interpretation; she sings again, exemplifying a good phrasing interpretation]. I believe things must be together, more integrated [referring to the musical and technical aspects of music making].

The observers also commented on the pupils' *lack of appropriate technical skills* or lack of appropriate physical movements, as they called it, in connection with the lack of musical understanding, as the dialogue below shows:

> *Teacher A* - I believe that, when pupils start a new piece, they need to understand the physical movements required by that piece and the dynamics together. The kinds of movements should come together with the musical aspect.
>
> *Teacher C* - Not separating things...
>
> *Teacher D* - Together, isn't it?
>
> *Teacher A* - This is a technical matter. To play *f* and *p* is technically different.
>
> *Teacher C* - Usually pupils do not perceive these things when they start reading a piece.

Other observers also showed similar concern. Musician A said:

> You may know the musical materials, but you need specific training to execute these materials, for them to have a musical character. You need to train the pupils' technical aptitude in order to obtain that musical result. This does not depend on the age; even a seven-old child can play musically. Usually children are happy when they play the right notes, rhythm and tempo. They don't see the musical aspect. Adults are more aware of this aspect.

The lack of the pupils' involvement with their playing was another major concern, as teacher D (panel of piano teachers) emphasised:

> What attracts my attention is the musical aspect…that plain, static way of playing, absolutely static. The music is here, you are there. There is a lack of involvement. I don't know if this happens because [some] pupils [do] not incorporate how they should execute the musical elements.

Teacher D (panel of piano teachers) also called attention to the difference between musical understanding and *musical maturation*: whilst the former involves musical intention, the latter generates improvement through time. Musical maturation requires *practice*, and the lack of this was another important cause for pupils' absence of improvement in performance. To illustrate this problem, the piano teachers' written reports on the observable effects of pupils' practice suggest that they had the following practising habits at home:

- *Hardly any practice* - Alan (experimental group 1), Conor (experimental group2), Jill (experimental group 7), and Henry (control group 10).
- *Little and thoughtless practice* - Bob (experimental group 4).
- *Some but thoughtless practice* - Adam (control group 1).
- *Some practice* - Ella (experimental group 5), Iris (control group 8), and Joe (control group 7).
- *Satisfactory practice* - Dora (control group 3) and Daniel (experimental group 3).
- *Satisfactory regular practice* - Ivy (experimental group 8).
- *Very good regular practice* - Ed (control group 5), Frank (experimental group 6), Glen (experimental group 9), and Hugh (experimental group 10).
- *Increasing practice through time* - Conor (control group 2) started the experiment with little practice and finished with very good practice at home; Ben (control group 4) used to practice a little but thoughtfully, and at the end his practice was very good; Flora (control group 6) and Greg (control group 9) started with little practice, and increased step-by-step, arriving at very good levels of practice.

The summary above shows that the pupils who improved their performance tended to practise more consciously and regularly at home; this endorses the findings of many researchers on instrumental practising. But practice was not a guarantee of performance improvement, as some pupils used to practise but did not show improvements in the post-test (Ella, experimental group 5; Frank, experimental group 6, Dora, control group 3; Ben, control group 4, Flora, control group 6, Joe, control group 7, Iris, control group 8, and Greg, control group 9). Besides, there was one pupil (Bob, experimental group 4) who improved his performance in the post-test, according to the observers, although he had little and thoughtless practice at home.

On the pupils' *lack of enculturation with the specific musical styles*, teacher D said:

> We need to consider to what extent these pupils listen to music. What kind of musical environment do they have at home? What kind of musical models do they have? Our pupils listen to this kind of music [classical music] during the lesson, once per week. So it is not possible to establish a real familiarity with this music.

The observers also discussed the problem of *lack of motivation.* Examples of this problem have been already offered in this Chapter 6 (Colin, experimental group 2, did not want to continue playing the piano; Alan, experimental group 1, and Ben, control group 4, were not happy with one of the pieces they were playing). Musician C and teacher A provided another example of lack of motivation to play a specific piece of music. They found that Joe (control group 7) enjoyed playing the second piece more (CD Rom 2, piece b), because in the pre-and post-test, his performance of this piece was better than his performance of the other piece (CD Rom 2, piece a).

The comments above show that the observers attributed the absence of pupils' improvement in performance to musical factors, related to their musical training itself. As discussed in Chapter 1 (page 26) many piano pedagogues have advocated a holistic approach to technique and musicality. This view coincides with the concerns presented

by many of the observers in this study; however, pedagogically, it is difficult to develop such a holistic approach to piano teaching and learning. If one considers Alexander's view on this problem, which has already been discussed in Chapter 3, any activity of life is influenced by the incorrect use of the psycho-physical self, and the incorrect sensory appreciation that one may have of her or his own use and functioning during this activity (Alexander, 1910: 80; 1923: 19, 78). Connecting this statement with piano playing, if piano pupils' use of their own organism was a bad one, and if their kinaesthetic sense was distorted, this perhaps had influenced negatively their understanding of musical conceptions.

The observers' and the piano pedagogues' concerns, together with the ideas provided by Alexander, point towards a holistic pedagogy, which not only includes the integration of technique and musicality, but also a concern with the way pupils use themselves and the quality of their bodily coordination and movements during performance. Most importantly, the constant development of their listening abilities, which also demands some level of self-awareness, should be a major concern in piano teaching. In sum, enhancing the pupils' use and functioning of the psycho-physical self in connection with a holistic conception of music making, which includes the integration of the musical and technical aspects of performance, would perhaps help them to develop more holistic musical conceptions, and to transmit these conceptions to listeners through the action of their entire psycho-physical selves.

In the literature of piano pedagogy, Whiteside (1951, 1961, 1969) reinforces the above points. She understands that the two fundamental factors in piano playing are the 'auditory image (what the pupil actually hears in his mind) and the feeling of rhythm' (Whiteside, 1951: 25). Whiteside (1951: 25) explains that there are two kinds of rhythm: the rhythm of the note values, which correspond to the articulation of separate notes ('notewise'), which is an essential component of playing. A second kind of rhythm, the rhythm of the form, 'arises from the work as a whole, the continuous evolution of its patterns and significance, the legato feeling of phrases, and the telling of a coherent musical story'. From the beginning, piano pupils need to think of rhythmic

notations as 'symbols for continuous patterns of sound, not as isolated statements' (Whiteside, 1951: 25). It is worth quoting Whiteside (1951: 25) in full:

> The pupil who has learned music by the way it sounds hears the tone when he looks at the symbol. The movements that make this imagined tone audible are directed by his [her] ear. They are as fluid, as efficient, as co-ordinated as his [her] movements when playing without notes. We must *not* allow separate physical movements or intellectual processes to interfere with this complete co-ordination. Many pupils listen notewise, because the separate initiation of power involved in the movement of each finger absorbs their attention and prevents them from playing a smooth phrase and from feeling the overall rhythm of the music [my italics].

The points raised so far invite us, as piano teachers, to reflect on pedagogical approaches, and to question any kind of mechanical approach to piano playing, which does not consider musicality as a *sine qua non.* These reflections will be developed in the Discussion and Conclusion of this thesis.

7.5.2 The potential benefits of the Alexander Technique to the pupils' performances

To investigate the extent to which the Alexander Technique may have helped the pupils in the experimental group to improve their performances, let us now look at the pupils' reports (questionnaire 2) on the Technique's effects on their playing:

- *Alan, experimental group* - 'It was easier to play the piano'.
- *Conor, experimental group 2* - 'After starting the Alexander lessons I could sit in the right position at the piano and I was able to play better. My tone quality was also better'.
- *Daniel, experimental group3* - 'With the Technique I learned to verify my posture before start playing and to support my feet and my hands'.

- *Bob, experimental group 4* - 'My body was more relaxed, facilitating my playing'.
- *Ella, experimental group 5* - 'With the Technique, playing the instrument became easier. I don't need to make a great effort to play'.
- *Frank, experimental group 6* - 'The Alexander lessons helped me to be more released, without tension, and to play better'.
- *Jill, experimental group7* - 'When playing, I relax and concentrate better'.
- *Ivy, experimental group 8* - 'When playing the piano I release my body much more, and my arms can move better, my head, and my entire body'.
- *Glenda, experimental group 9* - 'I learned to be more relaxed when playing'.
- *Hugh, experimental group10* - 'Before the Technique, my shoulders were very tense when playing the piano, and now they are much better'.

These reports largely coincide with those provided by musicians on the effects of the Alexander Technique on their playing and offered in Chapter 3 (page 128). However, the pupils in this study made only two specific references to the Technique's effects which are related to the musical factors of performance: improvement in tone quality, and the vague expression, 'I play better'. The other benefits provided by the Technique, reported by the pupils, refer to improvements in posture and sitting position; improvement in the contact of the feet on the floor and of the hands on the keyboard (grounding); release of excessive tension and effort; and improvement in concentration. These reports and the discussions presented throughout this chapter provide no grounds to suggest that the Alexander Technique lessons helped the pupils in the experimental group to improve their performances directly. However, the findings suggest that it helped the pupils' performances in indirect ways. More precisely, it is unlikely that the Technique lessons were responsible for the pupils' performing improvements; but it provided practical principles of action that helped these pupils to deal with their difficulties, and perhaps to avoid in the future the typical physical problems that many musicians have, such as the overuse syndrome and other postural misuses. Besides, it can be suggested that the Technique helped these pupils to improve their natural qualities, control the performance situation better, and engage in the activity of playing the piano in an easier way. To recall what Ben-Or stated, as quoted in Chapter 3, the

ability to consciously prepare musical performance, which preserves the integrity of the psycho-physical self, allows piano pupils to control the strain and anxiety that performance involves; the Technique may lead pupils to experience a sensation of ease in playing, as it helps pupils to become aware of their excessive tension and effort during performance. If so, as stated before, although indirect, the benefits of the Technique to the pupils' piano playing were significant.

Summary and Conclusion

This chapter has shown the piano pupils' changes in performance. Four categories of changes emerged from the observers' comments. The following table summarises these results.

Table 7.26 Summary of the changes in performance

	Evident improvements in performance	No evident improvements in performance	Slight worsening in performance	Special cases
Experimental Group	Daniel (experimental 3) Bob (experimental 4) Ivy (experimental 8) Glen (experimental 9) Hugh (experimental 10)	Alan (experimental 1) Conor (experimental 2) Ella (experimental 5) Frank (experimental 6)		Jill (experimental 7)
Control Group	Adam (control 1) Ed (control 5)	Dora (control 3) Joe (control 7) Iris (control 8) Greg (control 9) Henry (control 10)	Ben (control 4) Flora (control 6)	Colin (control 2)

In the light of what has been discussed throughout this chapter, some conclusions on the piano pupils' performances changes can be drawn. Firstly, with regard to the process of

performance assessment, the adoption of segmented criteria of observation helped the observers to focus their observations, but did not impede many of them from making holistic assessments. It was interesting to notice that the observers who tended to provide more holistic assessments were the Alexander panel members, since they frequently established relationships among the three aspects presented in the criteria of observation (pupils' physical conditions, attitude, and performance). Some of their comments illustrate this point.

Alexander panel member A:

> I felt that his whole body is more involved in the playing…before it was just mechanical, you know, he was kind of tam, tam, tam, tam, tam [note-by-note playing], he was sort of beating it. It was not connected with the music.
>
> It bounces out of the floor, you use gravity to bounce you. And he had that, all of a sudden, in his back…he had a springiness to it [post-test]. [His] attention is broader, it seems that he has more of a concept of the whole piece. Even in the rests. You know, it is not that he is just waiting…the intention is clearer, even through the silences.

Alexander panel member D:

> I noticed, he is obviously sustained more in his back, because when he does those chords, he is really…leaning, into the space [on front] of him. Whereas [in] this… he is takes [the chords] from his back.
>
> When she made mistakes…she didn't react to it, she just calmly stayed in her seat. I think her back is changed. This is pulled in quite a lot [pre-test]. Whereas [in] this one she is more in her back, more in her sitting bones. And I think she is calmer. Because in this one [pre-test] she had some kind of physical reactions when she made that mistake, I can't remember exactly what it was, she did something. Whereas [in] here she didn't do anything, she just stayed sitting down, calm.

It was also interesting to notice that all the observers got involved together in the process of performance assessment, providing relevant comments, engaging in important dialogues, and providing possible explanations for the pupils' performing difficulties, improvements, and non improvements.

Secondly, as stated at the beginning of this chapter, the main concern of the piano teachers, when watching the performances of their own pupils, was their lack of musical understanding. What became clear from the piano teachers' discussion on the topic was that the technical and musical aspects of pupils' musical training should come together as much as possible, as advocated by many pedagogues discussed in Chapter 1. Additionally, the problem of musical enculturation and the informal ways of learning (playing by ear, improvisation, and composition) were largely not discussed by the observers, and perhaps would deserve more attention in piano lessons. Finally, the lack of appropriate technical skills, a problem that has been already raised in Chapter 5, was a serious one, as many pupils in this study presented bad hand positions, and lack of awareness of the basic technical approaches to piano playing (bad finger and weight techniques).

The discussion offered in this chapter suggests that it is unlikely that piano pupils will improve their performances if there is no motivation, involvement, musical understanding, and proper technical means to play the piano. Musical maturation, enculturation in the musical styles, and especially practice play important roles. However, the findings of this study showed that some of the pupils who presented the best potentialities and had the right conditions to perform well, and were expected to improve their performances in the post-test, did not necessarily do so (Ben, control group 4, Frank and Jill, experimental group 6 and 8). Good performance is a potentiality, if pupils have acquired the skills to perform well. But it depends on variables beyond piano teachers and pupils' control.

Table 7.27 Summary of improvements in performance in the pupils in both groups

Experimental group			Control group
Improvements in performance l ←	**Initial performing conditions**		→ **Improvements in performance**
Experimental (4) Experimental (2) Experimental (6) Experimental (7) Experimental (8) Experimental (9) Experimental (10)	Experimental (1) Experimental (4) Experimental (7)	**Difficulty to monitor performance**	Control (2) Control (10)	Control (1) Control (2) Control (3) Control (5) Control (8) Control (10)
Experimental (2) Experimental (3) Experimental (6) Experimental (7) Experimental (8) Experimental (9) Experimental (10)	Experimental (2) Experimental (3) Experimental (10)	**Bad tone quality**		Control (1) Control (2) Control (3) Control (4) Control (5) Control (8)
Experimental (3) Experimental (4) Experimental (8)	Experimental (4) Experimental (8)	**Bad control of rhythm**	Control (2) Control (3) Control (6) Control (7)	Control (1) Control (2) Control (5) Control (6) Control (7) Control (9)
Experimental (3) Experimental (4) Experimental (8) Experimental (9) Experimental (10)	Experimental (3) Experimental (4) Experimental (5) Experimental (8)	**Bad execution of phrasing**	Control (2) Control (3)	Control (1) Control 2) Control (5) Control (9)
Experimental (1) Experimental (3)	Experimental (1) Experimental (3) Experimental (4)	**Bad execution of Dynamics**	Control (3) Control (7)	Control (1)
Experimental (8) Experimental (9)	Experimental (8) Experimental (9)	**Bad use of the sustaining pedal**	Control (7)	Control (7)

Many variables interfere with musical performance and consequently with its assessment: the performers' physical conditions (posture, sitting position, the seat height, and tiredness), and their emotional conditions (nervousness, motivation, concentration, and mood); the local conditions (the quality of the musical instrument, the physical environment, excessive light in the room, excessive noise, and presence of

a camera); also unexpected changes in the performers' habits (taking off one's shoes to avoid the pedal noise, as Ben (control group 4) did in his post-test performance). It may be concluded that live performance is 'in the moment'. The greatest pianists, as well as recreational amateurs and young pianists, may obtain unexpected bad performing results, or make moving communications of musical expression to listeners, as Glenda (experimental group 9) in her post-test performance.

Table 7.27 (see previous page) summarises the pupils' improvements in performance. It shows no clear correlation between the Alexander Technique and improvements in performance, as improvements in all items also occurred to many pupils in the control group. Thus, the results obtained by this analysis make it difficult, if not impossible, to attribute the pupils' improvements in performance to the Alexander lessons.

Looking at the changes in performance presented by the pupils, it seems unlikely that the Technique had a direct effect on the pupils' performance. The comments provided by many observers, and the pupils' reports on the Alexander Technique's effects on their playing suggest that they started dealing with their physical, attitudinal, and musical difficulties better, and had a better control of their performances. So it seems that the Technique helped them to improve their performances indirectly. As the findings presented in this chapter were relatively vague, the original research aim demands further exploration. To fully answer the research question, further immersion in the data is needed, and will be done in the next chapter.

Chapter 8

Combining and Comparing the Physical, Attitudinal, and Performing Changes within the Groups

Introduction

This chapter looks at more evidence in the data, which may confirm or dismiss the findings presented so far. It provides new findings which may illuminate the process of data analysis and allow the study to answer the initial research question. The opening section is dedicated to the examination of other reasons than the Alexander lessons, and specific musical factors that may explain why the pupils had physical, attitudinal, and performing improvements. The second section combines the findings of the previous chapters, and examines whether symmetrical changes in the physical, attitudinal, and performing aspects occurred to the pupils. Additionally, it examines whether there were significant differences in the pupils' changes within groups.

A third section looks at the piano teachers' expectations with regard to their pupils' improvements in the physical, attitudinal, and performing aspects over time. It presents a qualitative and a quantitative analysis of the written data obtained from the piano teachers' observation forms. A fourth section summarises the research findings and compares them with the effects of the Alexander Technique on musicians' playing, which has been reported in Chapter 3. The research aim, which is to investigate to what extent the Alexander Technique can help young piano pupils to improve their piano playing, is revisited and answered in the final section, which closes the chapter and the process of data analysis.

8.1 Other possible reasons for the pupils' physical, attitudinal, and performing changes

In the previous three chapters, possible explanations for the pupils' physical, attitudinal, and performing changes were provided. This section investigates other variables that may have been responsible for the changes observed in the pupils.

8.1.1 Other possible reasons for the pupils' physical improvements

As previously mentioned, three pupils in the control group (Adam - control group 1, Colin - control group 2, and Dora - control group 3) had evident beneficial physical improvements, probably because of the researcher's request for them to improve their posture instantly before the post-test recording began. Apart from this, the data revealed two other possible reasons for the postural improvements presented by some pupils. These were the piano teachers' concern about their pupils' posture, and the potential influences of the pupils in the experimental group on their peers.

8.1.1.1 The piano teachers' concern about their pupils' posture

Despite the fact that the piano teachers were blind to the pupils' conditions, it is possible that the nature of the research and the researcher's presence in the field may have, to some extent, influenced the way they conducted their piano lessons. The teachers had to pay attention to the pupils' bodily condition, as they completed the teachers' observation form weekly. Thus it is possible that they started paying special attention to this aspect. It was mentioned that some piano teachers frequently touched the pupils' backs, trying to help them to improve their posture. Besides, several times, teacher D claimed that some of her pupils in both groups were 'elegant', and that they were 'concerned with posture' (teachers' observation form). In the panel of piano

teachers, the teachers also paid special attention to the pupils' physical changes, offering many comments on this respect.

The argument above could be used to dismiss the claim that the physical changes, which occurred among the pupils in the experimental group, were due to the Alexander lessons. However, some facts prevent us from doing so. Firstly, all the piano teachers acknowledged their pupils' postural collapses, levels of tension, and other specific physical difficulties, as well as their physical improvements. The piano teachers' written comments concerning their pupils' physical improvements, and especially their reaction of enthusiasm when they were watching the pupils' pre-and post-tests, suggest that the improvements showed by some of the pupils in the experimental group surpassed their expectations. It seems that, if the piano teachers had been able to help their pupils to reduce their postural defects, they would also have helped some of the pupils in the control group; many other pupils would have presented evident beneficial physical changes, but these did not occur.

8.1.1.2 The potential influences of the pupils in the experimental group on their peers

In the panel of piano teachers, some teachers conjectured that some of the pupils who had the Alexander lessons may have influenced their peers, as these also started changing their posture in the piano lessons. For instance, Flora (control group 6) was concerned with her posture, because her piano teacher started making positive comments on the elegant posture that her peer, Frank (experimental group 6), presented whilst playing the piano (teacher D, teachers' observation form - piano lesson 4). In the panel of piano teachers, teacher F provided another example of this possibility. Watching Daniel's (experimental group 3) pre-and post-test performances, she said:

> I've been thinking, maybe Daniel has stimulated his peer [Dora, control 3]. As he was the 'butterfly', maybe he brought this contribution to the piano lesson. This is because, in the post-test performance, Dora improved her sitting

> position. But [Daniel] may also have stimulated his piano teacher, because Dora has changed the way she played and also her sitting position. I think our pupils also teach us [all piano teachers agreed].

If the pupils in the experimental group offered good postural models to their peers, it is important to re-emphasise the discussion on children's postural vulnerability, raised by Bienfait and by some writers on the Alexander Technique discussed in Chapter 3 (page 106). It seems reasonable to suggest that, if teachers and parents were generally able to provide to children good models of the use of the psycho-physical self, we would not observe the strong patterns of postural collapses presented by many pupils in this study.

8.1.2 Other possible reasons for the pupils' attitudinal improvements

Three other possible reasons for the beneficial attitudinal changes that some pupils showed can be considered. These are the sessions on mythology provided by the researcher to the pupils in the control group, the pupils' improved motivation because of the research, and the piano teachers' interventions.

8.1.2.1 The sessions on mythology provided by the researcher to the pupils in the control group

As stated in the chapter on methodology (Chapter 4), the researcher offered to the control group sessions on mythology. The sessions on mythology were appreciated by some pupils, and may have guided them into some kind of attitudinal changes. For instance, Ed (control group 5) seemed to be very interested in mythology; he started bringing books on the subject to the sessions. Dora (control group 3) was especially involved with these sessions. Her piano teacher noticed that she was 'coming back calmer from her sessions with the researcher' (teacher C). However, Ed did not

present physical and attitudinal changes, and Dora had evident beneficial physical changes, but not attitudinal changes.

Requested to answer whether or not the sessions on mythology helped them to play the piano (questionnaires 2), six pupils in the control group answered 'no'; four pupils answered 'yes'. These offered the following explanations:

- *Dora, control group 3* - Because they can help me to create music based on the myths.
- *Flora, control group 6* - Because I always remember the dialogues when I am playing the piano.
- *Greg, control group 9* - Because I compare the parts of the music with the parts of the myth.
- *Henry, control group 10* - Because it improved my imagination.

Apart from Greg, who was able to establish a tangible relationship between both music and myth, comparing their form, the other comments provided by the pupils were not substantial. On the other hand, the accounts provided by the experimental group (questionnaire 2) concerning the Alexander Technique's influence on their piano playing identified some tangible factors: better concentration, release of tension, ease in playing, better posture and feet support, and better tone quality. From these evidences, it seems improbable that the sessions on mythology had specific effects on the playing of the pupils in the control group, although they may have some positive effects on their overall attitude within the context of the piano lessons.

8.1.2.2 The pupils' improved motivation because of the research

Overall, all pupils seemed to be pleased to be participating in the research, and some pupils became especially motivated. In the baseline period, some pupils were excited

because of the video-recording (Jill, experimental group 7 and Joe, control group 7; Hugh, experimental group 10 and Henry, control group10); during that period, their reactions to the recording slightly interfered with the piano lessons. However, this excessive excitement did not last long. Glenda (experimental group 9) was especially motivated because of the research, according to her teacher (teacher D); she was really involved with the Alexander lessons during the experiment, as mentioned elsewhere. Although improvement in motivation happened to many pupils who belonged to both groups, due to their participation in the research, it is unlikely that this can explain other significant attitudinal changes experienced by the majority of the pupils in the experimental groups.

8.1.2.3 The piano teachers' interventions

The interventions of two piano teachers, concerning their pupils' attitudes in the piano lessons, were extremely relevant, and promoted attitudinal changes in these pupils. In the case of Joe (control group 7), it is indisputable that his piano teacher's reaction caused his change in attitude. As explained in Chapter 6, teacher F cried to defend herself against Joe's aggression. A second interesting encounter occurred between teacher D and her pupil, Henry (control group 10). As she had frequently and without success asked Henry to practice at home, she told him that he would not play a piano piece that they had been rehearsing together - a piece played by ear, which included the participation of Henry, his peer (Hugh, experimental group 10), and herself. In the next week, Henry came to the lesson more prepared to play the piece, which meant that he had probably practised the piece at home that week. Apart from these cases, the researcher did not notice any other specific intervention by the piano teachers, with regard to their pupils' attitudes.

8.1.3 Another possible reason for the pupils' improvements in performance

As well as the musical factors and the potential effects of the Alexander Technique on the pupils' performances, *the piano teachers' individual pedagogical abilities* may explain why some pupils in both groups showed improvements in performance. Firstly, it is important to acknowledge that the piano teachers' participation in the research led them to emphasise repertoire, as they wanted their pupils to be prepared to record the pre-and post-tests. Thus the research process probably interfered with their teaching approaches. But overall, the six piano teachers who took part in the research adopted similar pedagogical strategies. The majority of teachers asked pupils to improve their posture, and touched their backs to help them to improve their sitting position. The teachers demonstrated musical passages to pupils by playing the pieces, and gave them oral encouragement; they also used metaphorical expressions to illustrate the piano pieces' musical features. They sang specific melodic passages to enable pupils to understand phrasing and helped them to analyse the pieces before playing. They also asked pupils questions concerning the pieces' features, especially their musical form; they played together with the pupils, and accompanied their performances with gestures, as well as with clapping and singing. Additionally, the teachers usually required their pupils to practice slowly and with separate hands, to practice at home, and to pay attention to fingering.

Nonetheless, some of the teachers had individual pedagogical abilities and used strategies that were significant to their pupils' piano learning process. For instance, some piano teachers used to give two or more contrasting musical illustrations, so that the pupils could compare them and choose the best musical execution (teachers A, C and D). Some required their pupils to play a piano piece by ear (teachers C and D). Others provided theoretical explanations to their pupils (teachers A, C, and D). Still others gave special attention to the pupils' ability to memorise the pieces (teachers D and E). Other teachers gave time for pupils to solve problems, asked pupils questions concerning the features of the pieces, and divided the pieces into sections to help their pupils to assimilate specific passages (teachers B and D). Teachers C and D asked their pupils to assess their own performances, and the ones presented by their peers.

Some were especially concerned with their pupils' hand positions (teachers A, B and E). Teachers A and C demonstrated to pupils the appropriate technical approaches and movements to be adopted in specific passages. Teacher C was the only one who gave attention to the position of the seat in relation to the instrument; she also requested different interpretations of the same piece. Teacher F was the only one who used to listen to her pupils without interrupting their performances.

Teacher A was especially concerned with her pupils' practising abilities. She instructed pupils on how to practice at home, and required thoughtful practising from them. She also required pupils to look at the musical score when sight-reading and to practice the 'geography' of the keyboard. On the other hand, teacher D was especially skilled in enhancing her pupils' ability to think, encouraging them to question her explanations, to listen to and criticise their own playing, and to criticise their peers' performances. She requested her pupils to be aware of what they were doing. She frequently required her pupils to sing the melodies, to clap the rhythm of specific passages, and to anticipate the movements necessary to execute some specific passages, in order to avoid mistakes. In addition, she asked pupils questions about the composers of the pieces.

From the beginning and very often, some teachers required their pupils to pay attention to musical details, especially phrasing, dynamics, and musical character (teachers A, D, and E), whilst others required such details with less frequency (teachers B, C, and F). This suggests that some piano teachers were more demanding on pupils, in musical terms. Interestingly, the most demanding teachers taught the majority of pupils who had evident improvements in performance: *teacher A* taught Adam (control group 1) and Bob (experimental group 4); *teacher D* taught Ed (control group 5), Glenda (experimental group 9), and Hugh (experimental group 10); and *teacher F* taught Ivy (experimental group 8). This information reinforces the argument presented in the previous chapter: it is unlikely that the pupils' improvements in performance can be mainly or directly attributed to the Alexander Technique; they probably occurred because of combined factors, which include the

musical factors previously mentioned in Chapters 3 and 7 in association with the piano teachers' pedagogical skills.

8.2 Combining the pupils' physical, attitudinal, and performing changes

So far, the process of data analysis has presented the piano pupils' physical, attitudinal, and performing changes separately. In order to examine the possible relationships among these three aspects, a combination and summary of the findings presented previously will be offered in this section.

8.2.1 Combining the pupils' physical and attitudinal changes

Table 8.1 (see next page) shows the pupils in both groups who had any kind of physical changes in connection with evident beneficial attitudinal changes. The results presented in this table suggest a strong symmetry between the physical and attitudinal aspects, since the seven pupils in the experimental group who showed evident or at least minimal beneficial physical changes also improved their overall attitudes in the piano lessons and in performance, according to many observers. This result suggests that the physical and attitudinal changes showed by the pupils probably occurred because of the Alexander Technique. Nuttall (1999a: 89) states that:

> Alexander teachers engage their pupils in a set of general teaching principles that seek to create better physical balance and poise; this in turn can lead to the reduction, if not elimination, of psychological stresses and tensions that affect individual's ability to function to their full potential. Essentially, it is proposed that the achievement of outer balance first will lead to the creation of better inner balance, so to speak.

Table 8.1 Summary of the combined physical and attitudinal changes in the pupils

Experimental group		Comparison	Control group	
Evident or minor beneficial physical changes *and* Evident beneficial attitudinal changes	Alan (experimental 1) Conor (experimental 2) Daniel (experimental 3) Bob (experimental 4) Frank (experimental 6) Jill (experimental 7) Hugh (experimental 10)		None	Evident or minor beneficial physical changes *and* Evident beneficial attitudinal changes
Evident or minor beneficial physical changes *and* No evident beneficial attitudinal changes	None		Adam (control 1) Colin (control 2) Dora (control 3)	Evident or minor beneficial physical changes *and* No evident beneficial attitudinal changes
No evident physical changes *and* Evident beneficial attitudinal changes	Ivy (experimental 8)		Joe (control 7) (special case)	No evident physical changes *and* Evident beneficial attitudinal changes
No evident physical changes *and* No evident beneficial attitudinal changes	Ella (experimental 5)		Ed (control 5) Flora (control 6) Iris (control 8) Henry (control 10)	No evident physical changes *and* No evident beneficial attitudinal changes
Physical worsening *and* Evident beneficial attitudinal changes	Glenda (experimental 9) (special case)		None	Physical worsening *and* Evident beneficial attitudinal changes
Physical worsening *and* No evident beneficial attitudinal changes	None		Ben (control 4) Greg (control 9)	Physical worsening *and* No evident beneficial attitudinal changes

The process may have been reversed. As the findings of this research suggest, even if physical improvements did not occur to some pupils in the experimental group, they showed positive attitudinal changes. Perhaps the 'inner balance' is a primary achievement of Alexander practitioners. If so, the creation of inner balance would lead to the achievement of outer balance. It is plausible to hypothesise that if the pupil's mental attitude concerning the use of themselves did not change, it is unlikely that any effective and everlasting physical changes would happen, as they were not aware of their harmful habits of the use of themselves. If the majority of the pupils in the experimental group showed a different overall attitude in their post-test performance, it is possible that they became, to some extent, aware of their harmful patterns of use of their psycho-physical selves. So there is an important special feature

of the causes underlying the physical changes showed by the pupils in the experimental group: whilst physical changes in the pupils in the control group were unconscious and related to their postural oscillations, or to other people's requirements (in this case the researcher's), the physical changes shown by the pupils in the experimental group probably emerged as a consequence of the pupils' awareness of their own postural problems.

Whether or not attitudinal changes come first, or whether or not physical and attitudinal changes occur simultaneously, the research findings reinforce the theories developed by Lowen (1982) and Keleman (1992) (Chapter 3), who advocated the inseparability of these aspects. More importantly, they reinforce Alexander's argument concerning the unity of the 'psycho-physical self': the physical, psychological, and mental aspects of human beings are integrated, and influence each other. Habitual postural attitudes, in Alexander's terms, and patterns of defence, in Lowen's and Keleman's terms, are thus 'psycho-physical' attitudes; most probably, these attitudes can only be effectively changed if people are aware of them.

8.2.2 Combining the pupils' physical, attitudinal, and performing changes

The pupils in both groups who had different kinds of physical changes, as well as performing improvements, are indicated in table 8.2 (see next page). The findings summarised in this table do not indicate the existence of a strong symmetry between the pupils' physical aspect and their performance. This makes sense, if one considers the examples provided in Chapter 3, of pianists who play extremely well although they may use themselves badly. Thus, these findings reinforce the hypothesis that inappropriate posture does not necessarily impede good performance, if performers have musical attributes needed to play well. However, it is important to re-emphasise that the findings of this research, reported in Chapter 7, suggest that inappropriate use of the body in performance may reinforce the musical difficulties that the pupils have already presented, or may impair their musical progress.

Table 8.2 Summary of the combined physical and performing changes in the pupils

Experimental group		Comparison	Control group	
Evident or minor beneficial physical changes *and* Evident improvements in performance	Daniel (experimental 3) Bob (experimental 4) Hugh (experimental 10)		Adam (control 1)	Evident or minor beneficial physical changes *and* Evident improvements in performance
Evident or minor beneficial physical changes *and* No evident improvements in performance	Alan (experimental 1) Conor (experimental 2) Frank (experimental 6) Jill (experimental 7)		Colin (control 2) Dora (control 3)	Evident or minor beneficial physical changes *and* No evident improvements in performance
No evident physical changes *and* Evident improvements in performance	Ivy (experimental 8)		Ed (control 5)	No evident physical changes *and* Evident improvements in performance
No evident physical changes *and* No evident improvements in performance	Ella (experimental 5)		Flora (control 6) Joe (control 7) Iris (control 8) Greg (control 9) Henry (control 10)	No evident physical changes *and* No evident improvements in performance
Physical worsening *and* Evident improvements in performance	Glenda (experimental 9) (special case)		None	Physical worsening *and* Evident improvements in performance
Physical worsening *and* No evident improvements in performance	None		Ben (control 4)	Physical worsening *and* No evident improvements in performance

Table 8.3 (see next page) summarises the pupils' evident attitudinal changes and the lack of these changes in connection with their improvements in performance. The fact that all the pupils in the experimental group who had evident attitudinal improvements also had performing improvements suggests a strong correlation between these aspects. This is because only two pupils in the control group did not show evident changes in attitude, but improved their performances.

The evidences given in the present chapter reinforces the hypothesis that the Alexander Technique had an indirect and positive influence on the pupils' performance, but any specific improvement in their performances cannot be truly

attributed to the Technique. The physical and attitudinal changes shown by many pupils in the experimental group seem to be related to the Alexander lessons.

Table 8.3 Summary of the combined attitudinal and performing changes in the pupils

Experimental group		Comparison	Control group	
Evident attitudinal changes *and* Evident improvements in performance	Daniel (experimental 3) Bob (experimental 4) Ivy (experimental 8) Glenda (experimental 9) Hugh (experimental 10)		None	Evident attitudinal changes *and* Evident improvements in performance
Evident attitudinal changes *and* No evident improvements in performance	Alan (experimental 1) Conor (experimental 2) Frank (experimental 4) Jill (experimental 7)		None	Evident attitudinal changes *and* No evident improvements in performance
No evident attitudinal changes *and* improvement in performance	None		Adam (control 1) Ed (control 5)	No evident attitudinal changes *and* improvement in performance
No evident attitudinal changes *and* Worsening in performance	None		Colin (control 2) (special case) Ben (control 4)	No evident attitudinal changes *and* Worsening in performance
No evident attitudinal changes *and* No evident improvements in performance	Ella (experimental 5)		Dora (control 3) Flora (control 6) Joe (control 7) Iris (control 8) Greg (control 9) Henry (control 10)	No evident attitudinal changes *and* No evident improvements in performance

To avoid all uncertainty, another set of data provided by the piano teachers (teachers' observation form), which shows their expectations concerning their pupils' musical progress, will be analysed next.

8.3 Looking at the piano teachers' expectations

The piano teachers' written observations from the teachers' observation forms, revealed their expectations with regard to the pupils' improvements in performance. From their

accounts, especially of pupils' levels of practice, motivation, and involvement with the instrument, it can be suggested that they expected some pupils to present evident performing improvements. This is because these pupils used to practice at home, had good musical abilities, and showed continuous performance improvements throughout the experiment. On the other hand, piano teachers' written feedback suggest that they had no great expectations concerning other pupils' improvements, as these pupils did not practice at home, and presented difficulties in more than one aspect (physical, attitude, and performance). The qualitative and quantitative perspectives of the piano teachers' expectations may be summarised as follows.

8.3.1 A qualitative perspective on the piano teachers' expectations of pupils musical improvements

A qualitative synthesis of the piano teachers' expectations on their pupils' performing improvements was drawn from their written comments given on the teachers' observation form. It is possible to suggest that:

8.3.1.1 Four pupils in the experimental group and two in the control group presented evident improvement in performance, as expected by their piano teachers

Daniel (experimental group 3), Ivy (experimental group 8), Glenda (experimental group 9), Hugh (experimental group 10), Adam (control group 1), and Ed (control group 5) were expected to improve their performance, as they presented reasonable and regular or even very good levels of practice, motivation, and involvement with their piano playing.

8.3.1.2 *One pupil in the experimental group and two in the control group did not present evident improvement in performance, although their piano teachers expected them to do so*

Frank (experimental group 6), Flora (control group 6), and Greg (control group 9) were expected to improve their performances in the post-test. They had good musical qualities, good or even very good levels of practice, and were highly motivated and involved with their piano playing. However, they did not play musically better in the post-test, according to many observers.

8.3.1.3 *Four pupils in the experimental group and four in the control group did not present evident improvement in performance, as expected*

For lack of musical understanding, practice, motivation, maturation, or involvement, or other specific reasons, Alan (experimental group 1), Conor (experimental group 2), Ella (experimental group 5), Jill (experimental group 7), Dora (control group 3), Joe (control group 7), Iris (control group 8), and Henry (control group 10), did not present evident improvement in performance, which did not seem to be a surprise for their piano teachers.

8.3.1.4 *Two pupils in the control group presented worsening in performance, although this was not expected*

Colin (control group 2) was a good pupil, with very good musical potentialities. But he was considered to be a special case in this study, as the observers presented divergent views on his performing improvements. Ben (control group 4) was a very good pupil in all respects, and was expected to improve his performance; but he had worsening in performance in the post-test performance, according to some observers and to his piano teacher.

8.3.1.5 *Surprisingly, one pupil in the experimental group presented improvement in performance*

Given his physical and attitudinal difficulties, and some specific musical difficulties, Bob (experimental group 4) was not expected to present evident improvement in performance. Nonetheless, he improved his performance in the post-test, according to many observers.

In view of the musical factors mentioned in the previous chapter, and the piano teachers' expectations about their pupils' progress, it seems unlikely that the improvements or absence of improvements in the performance of the pupils in the experimental group can be directly related to the Alexander lessons. Some pupils in the experimental group who presented evident performance improvements (Ivy, experimental group 8; Glenda, experimental group 9; and Hugh, experimental group 10) were expected to do so by their piano teachers. Probably the Technique made it easier for them to play the piano, as the pupils themselves affirmed. But together with this, their musical understanding, practice, motivation, and maturation formed the correct conditions for their good performances. The same favourable conditions explain the performing improvements presented by the two pupils in the control group (Adam - control 1 and Ed - control 5).

To substantiate this statement, let us consider the case of Frank (experimental group 6). The Alexander Technique could help him to play more easily and control his performance in a very calm way. But even after having the Alexander lessons, and having very good musical potentialities, Frank did not present evident improvement in performance, although he was expected to do so. Conor (experimental group 2), Ella (experimental group 5) and Jill (experimental group 7) did not improve their performances either, although they had Alexander lessons. Interestingly, a noticeable and unexpected performing improvement occurred to one pupil in the experimental group: Bob (experimental group 4) who had physical and attitudinal difficulties, although he had good musical potential, 'a special involvement with music', as some

observers highlighted (Chapter 6). This discussion reinforces the initial findings of this study. It seems that the Alexander Technique can help piano pupils to deal with, or even overcome their difficulties, which impair good performance. The Alexander lessons may have been one of the factors that favoured good performance, but did not necessarily guarantee specific performing improvements.

8.3.2 A quantitative perspective on the piano teachers' expectations on pupils musical improvements

The piano teachers, using the teachers' observation forms provided quantifiable information concerning their pupils' progress in each variable over time, so that it was possible for this study to provide some statistical analysis. The teachers rated the pupils' progress in each one of the variables included in the three aspects under investigation, for twelve weeks (four lessons in the baseline period added to eight subsequent piano lessons): (1) physical changes - *posture* and *tension*; (2) attitudinal changes - *attentiveness, anxiety, self-confidence,* and *motivation*; and (3) performing changes - *monitoring of performance, tone quality, rhythm quality, phrasing,* and *dynamics.* Additionally, they also rated the observable effects of pupils' *practice* at home. All these variables were rated on a five-point ordinal scale: 1 - 'bad', 2 -'poor', 3 -'more or less', 4 -'good', and 5 -'very good'. This data was analysed by means of SPSS.

The changes in all variables over time in both groups can be understood by means of presentation in graphs. Figures 8.1 and 8.2 show the experimental and the control groups' changes over time in the *physical aspect* - posture and tension - for both experimental and control groups. Both graphs suggest that the pupils in the experimental group had more postural problems and higher levels of tension at the baseline, than the pupils in the control group. Their oscillations in posture and levels of tension throughout the experiment also seemed to be stronger than the ones presented by their peers. However, the experimental group improved their posture and reduced their levels of tension dramatically in the last three piano lessons, whilst the control group had slight postural improvement and slight increase in tension.

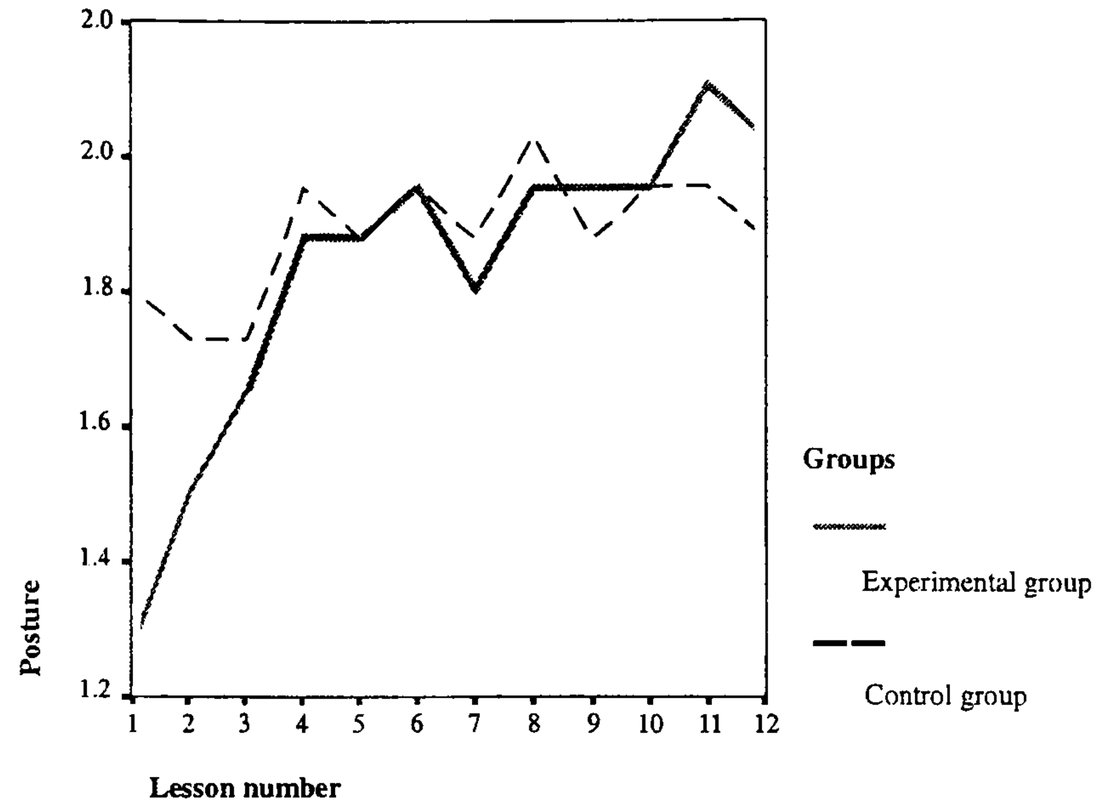


Figure 8.1: Physical aspect - the pupils' changes in posture over time.

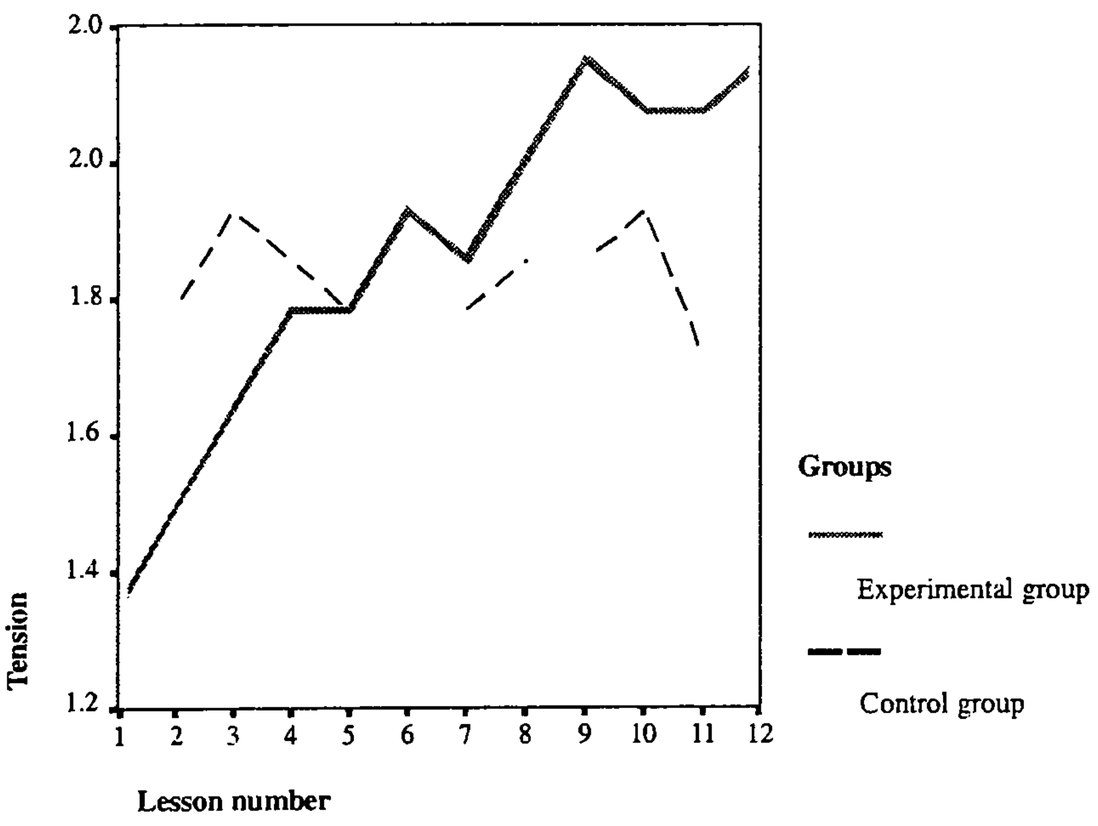


Figure 8.2: Physical aspect - the pupils' changes in the level of tension over time.

Figures 8.3, 8.4, 8.5, and 8.6 show the experimental and the control groups' changes over time in the *attitudinal aspect*. The graph for attentiveness (figure 8.3) shows that pupils in both groups, especially pupils in the experimental group, had strong

oscillations in this variable. It seems that the levels of attentiveness in the pupils of both groups tended to improve radically in the last two lessons.

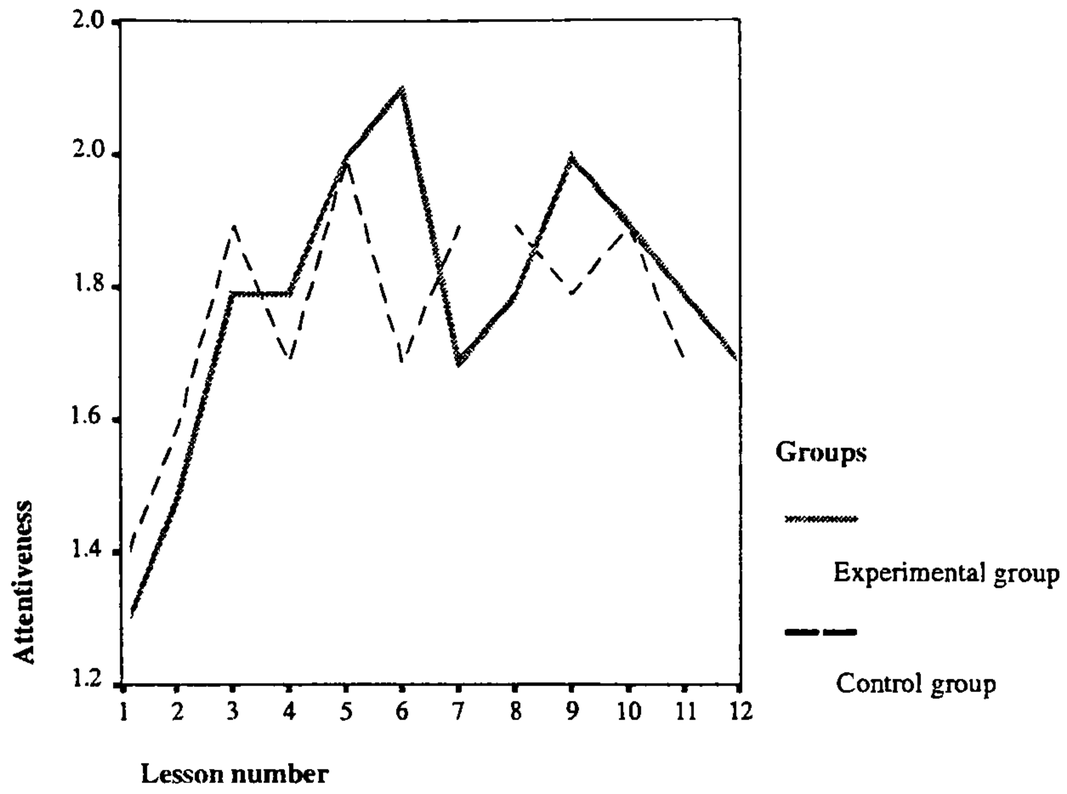


Figure 8.3: Attitudinal aspect - the pupils' changes in attentiveness over time.

As suggested by the graph in figure 8.4, the pupils in the control group showed a slight increase in anxiety in the last piano lesson. The pupils in the experimental group had stronger oscillations in this variable than the pupils in the control group, but they also had a visible decrease in anxiety from lesson number 8 on, and a slight increase in anxiety in the last piano lesson.

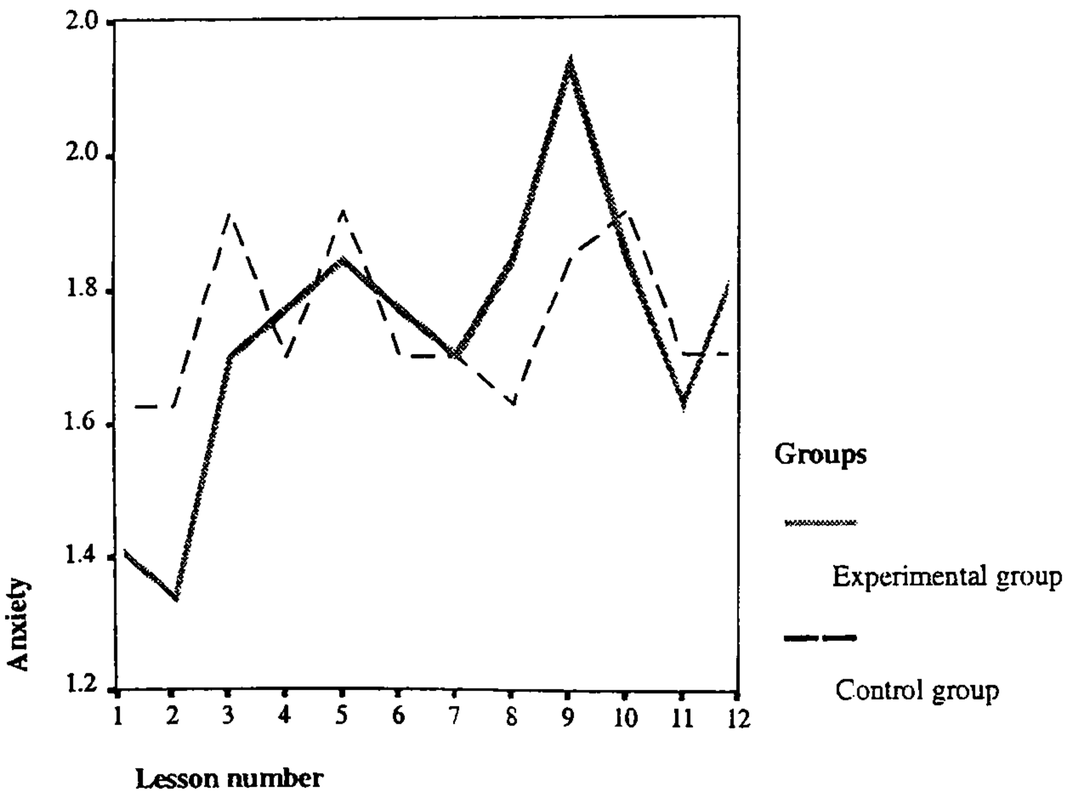


Figure 8.4: Attitudinal aspect - the pupils' changes in the levels of anxiety over time.

Figure 8.5 illustrates the pupils' levels of self-confidence. In the piano lessons, the pupils in the control group seemed to have more stable confidence if compared with the pupils in the control group. From lesson 8 on, however, the pupils in the experimental group improved their confidence considerably.

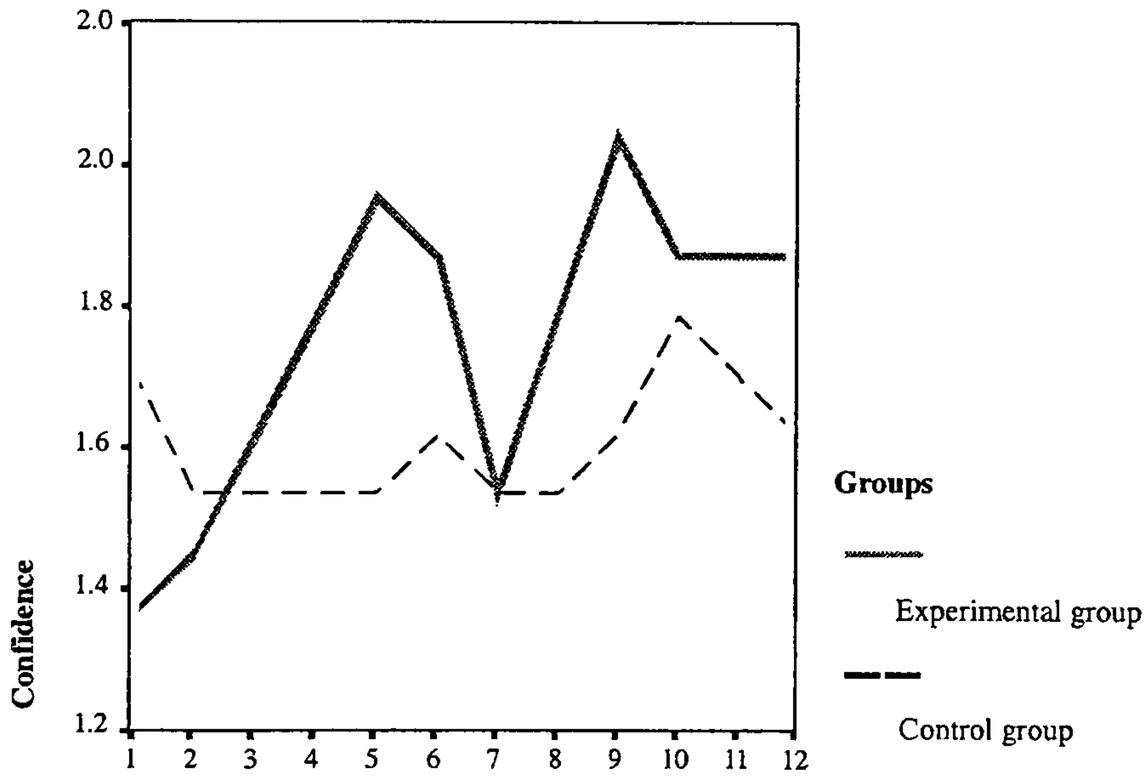


Figure 8.5: Attitudinal aspect - the pupils' changes in levels of confidence over time.

As figure 8.6 suggests, the oscillation of the pupils' motivation over time was significant. The control group had a noticeable decrease in motivation, with some improvement in lesson 9 and again decreased motivation in the subsequent piano lessons. Interestingly, the experimental group showed its higher level of motivation soon after the Alexander lessons started (lessons 5 and 6), a remarkable decrease in motivation in the next two lessons, and again, a remarkable increase in motivation from lesson 9 onwards.

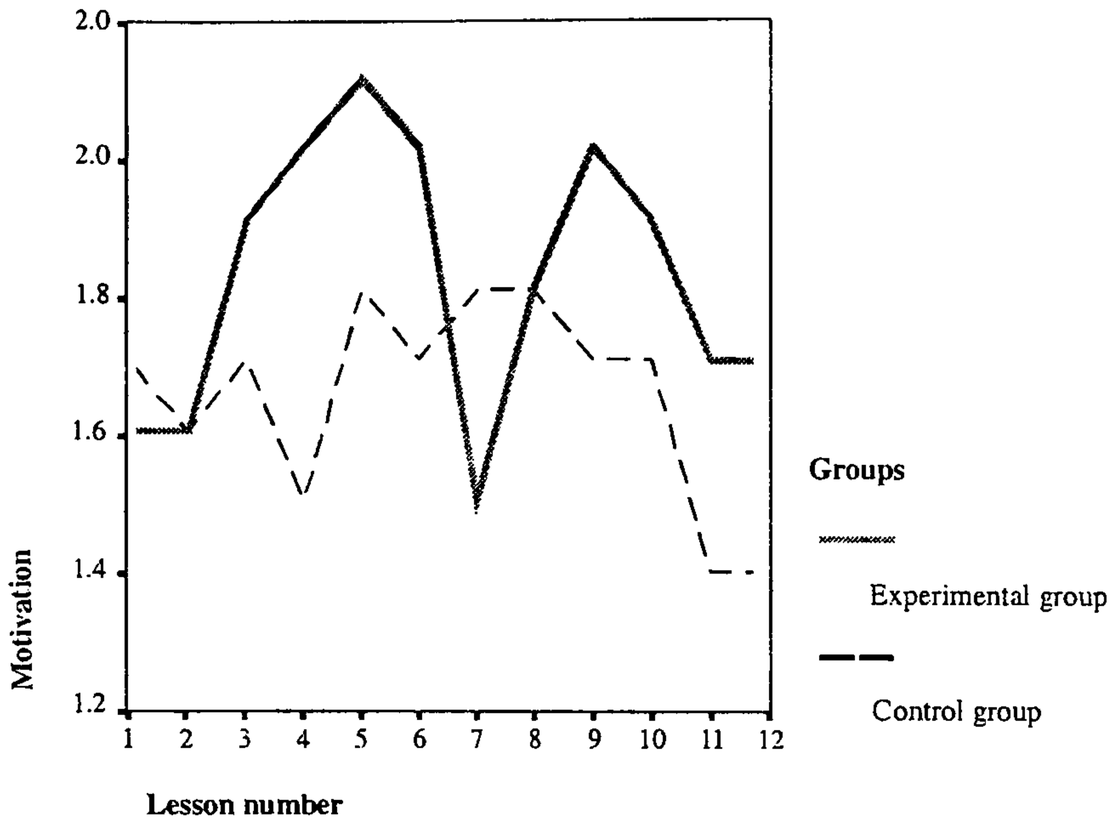


Figure 8.6: Attitudinal aspect - the pupils' changes in levels of motivation over time.

The pupils' *performing changes* and *practice* over time are illustrated in figures 8.7, 8.8, 8.9, 8.10, and 8.11. The graph below (figure 8.7) shows the pupils' ability to monitor their performance. The oscillations were more noticeable in the control group than in the experimental group, but both groups had improved monitoring at the end of the experiment. However, from lesson 2 on, the pupils in the experimental group showed a constant and significant improvement in their ability to monitor their performance.

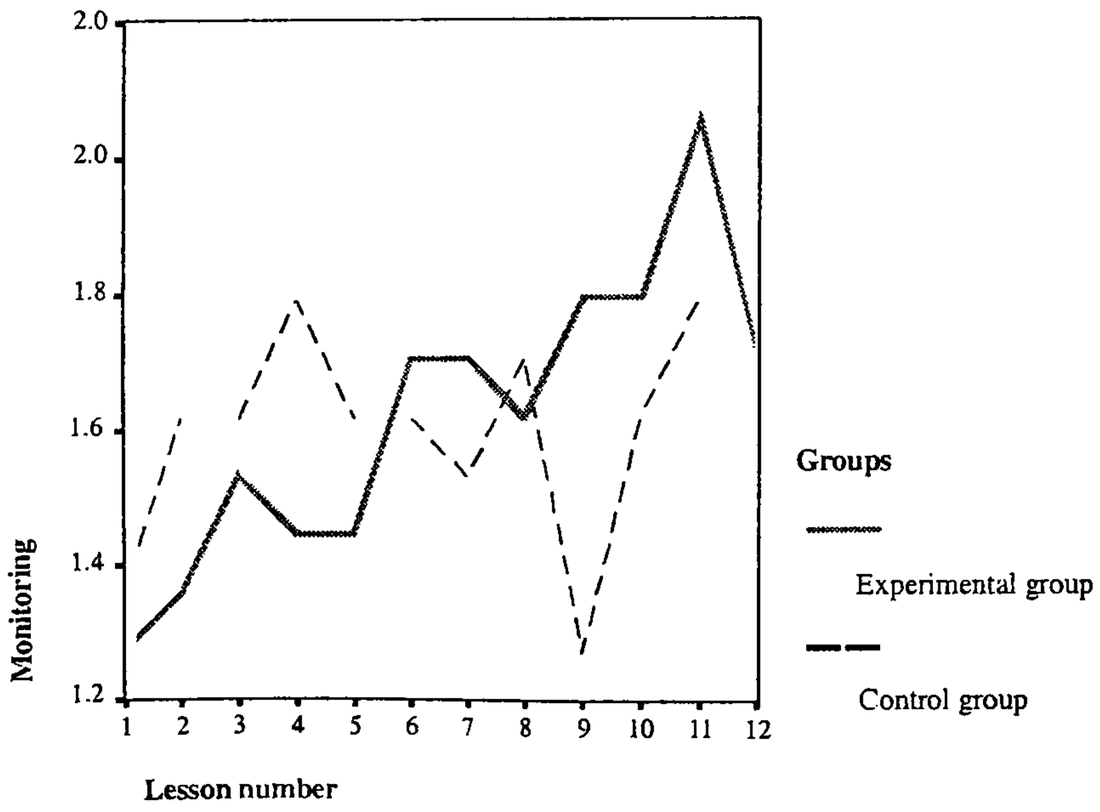


Figure 8.7: Performance: the pupils' changes in performance monitoring over time.

Concerning tone quality, figure 8.8 suggests that both groups had evident oscillations, and showed strong decrease and increase in tone quality over time. Figure 8.9 shows that the same kind of oscillations appeared in both groups, with regard to rhythm quality. The pupils in both groups had strong improvements in both tone quality and rhythm quality in the last three lessons (lessons 8.10, 8.11, and 8.12).

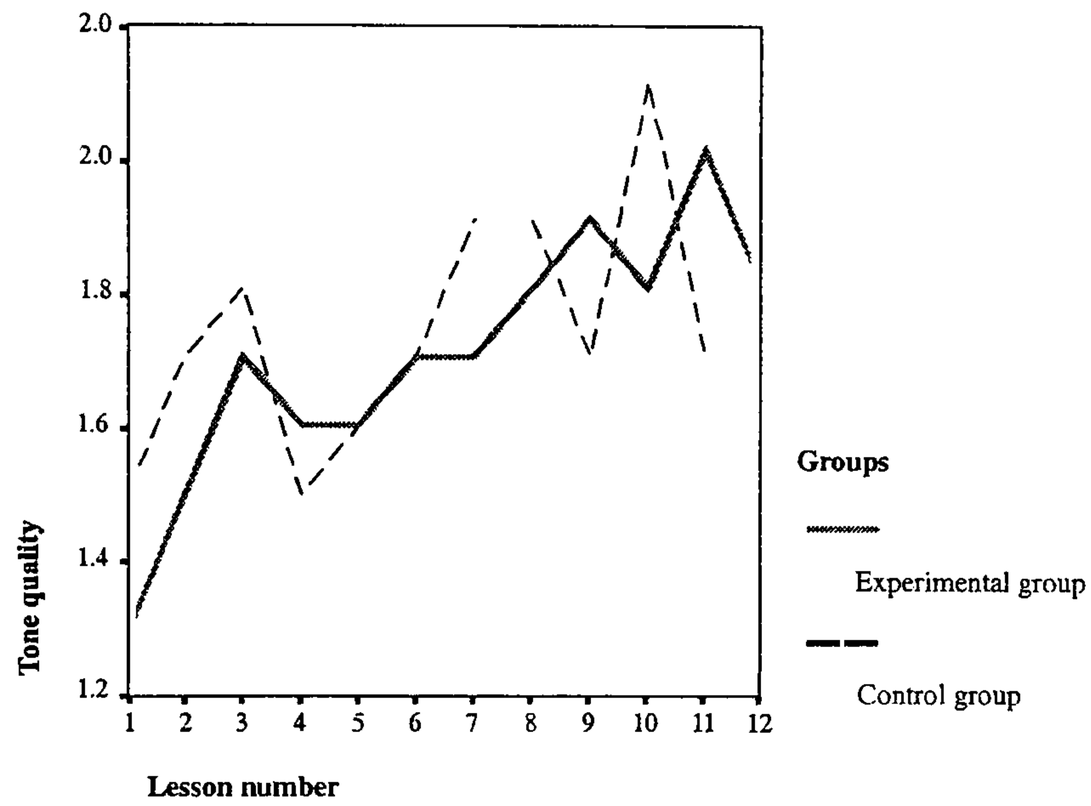


Figure 8.8: Performance: the pupils' changes in tone quality over time.

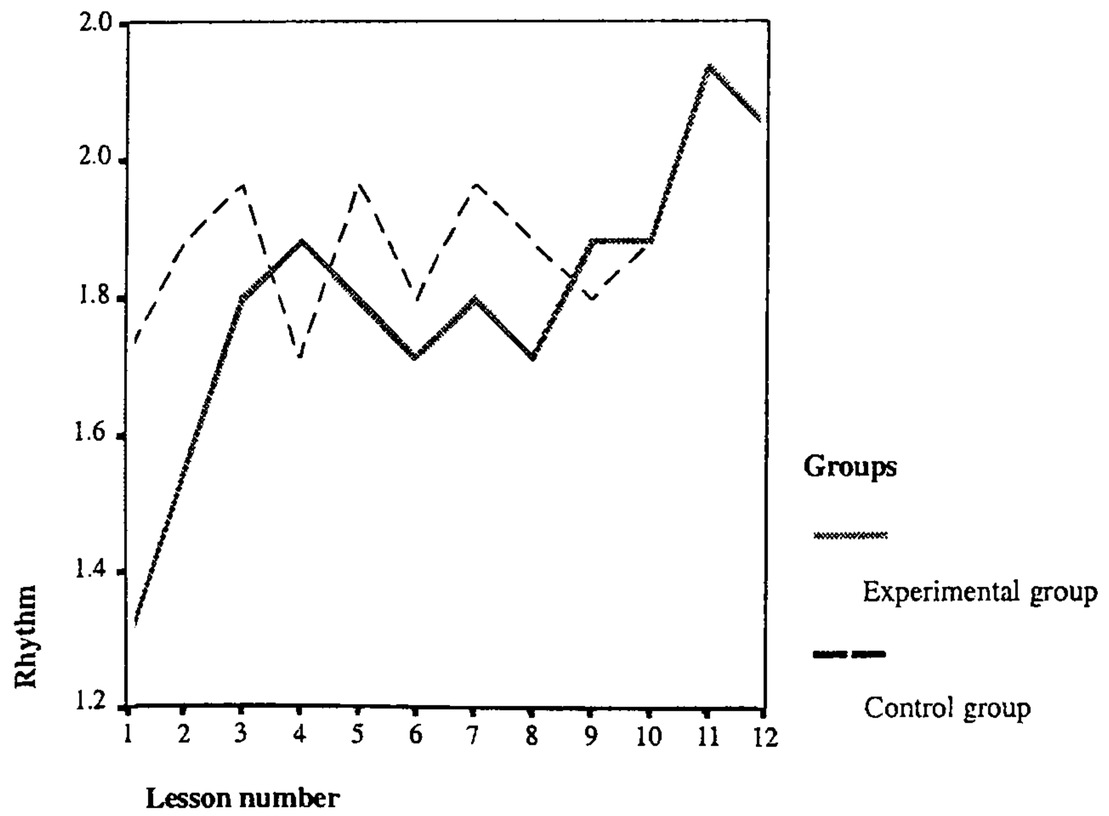


Figure 8.9: Performance: the pupils' changes in rhythm quality over time.

Once more, the oscillations presented by the pupils in both groups in the execution of dynamics were visible, as illustrated by figure 8.10. The pupils in the control group showed stronger oscillations in dynamics, but had improvement in dynamics in the last piano lesson (lesson 12). The pupils in the experimental group showed a remarkable improved execution of dynamics from the fourth piano lesson onwards, exactly when they started having the Alexander lessons; decreased ability to execute dynamics in lesson 8; and again, improved dynamics in the next three lessons (from 9 to 12).

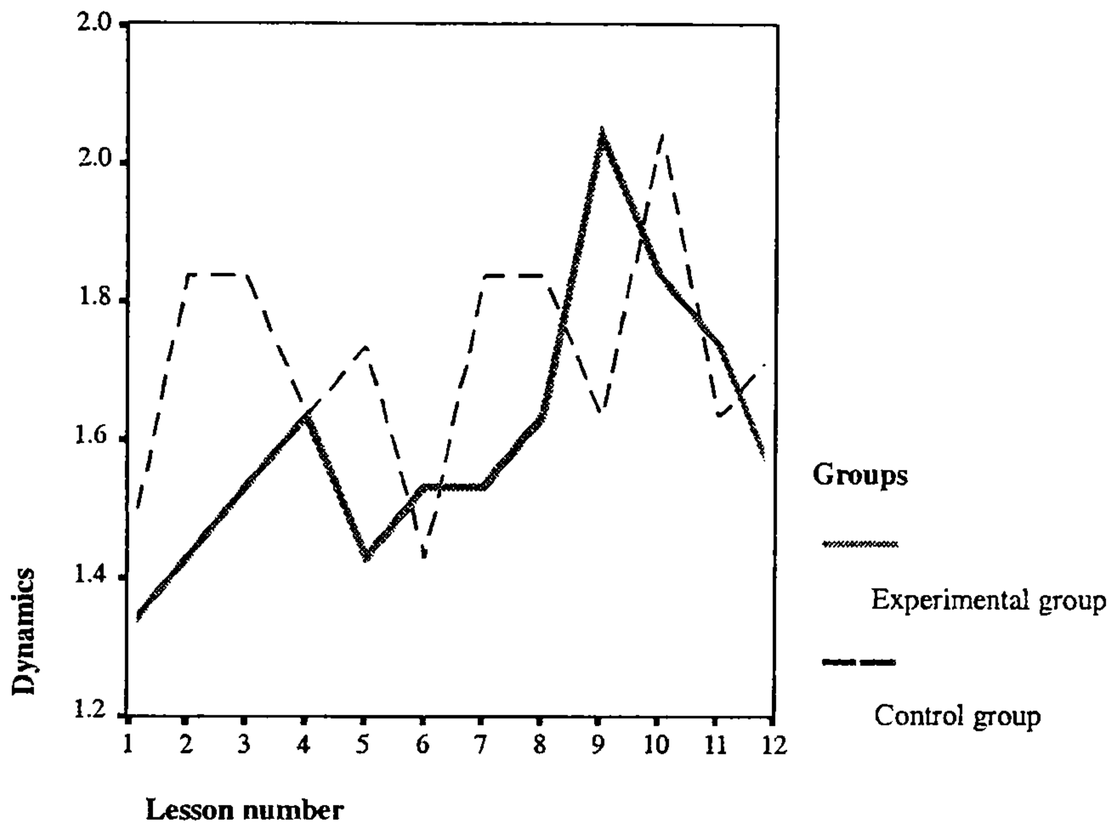


Figure 8.10: Performance: the pupils' changes in dynamics over time.

Figure 8.11 suggests that the pupils in the control group had high levels of oscillation in the execution of phrasing. But in the last piano lesson (lesson 12), they showed improved ability to execute phrasing. The pupils in the experimental group also showed strong oscillations in this variable. They showed improved ability to execute phrasing in piano lesson 8, and again in piano lessons 11 to 12.

The graphic presentations of pupils' improvements over time suggest that the pupils in the experimental group never returned to their original conditions in any of the variables, an outcome which coincides with comments made by Alexander panel members B, C, and D, concerning pupils' posture (Chapter 5). It is important to bear in mind that the data set analysed in this section was provided by the six piano teachers, who may have interpreted their pupils' progress in different ways. No other data set was available which could confirm or refute the teachers' accounts. However, and more importantly, it can be suggested that the Alexander Technique had a positive influence on the pupils' process of learning, more than it had on their musical performances *per se*. If so, this opens new windows for this study, which go beyond its original expectations.

This study has emphasised the examination of pupils' performances, instead of seeking to provide details on their learning processes. Moreover the study has been dealing with the Alexander Technique as if it were a way of improving piano performance. However, the data set provided by the teachers suggest that the Alexander Technique's effects on pupils' process of learning is much more important than its effects on their performances. If the Alexander Technique helped the pupils to understand something about themselves, to enhance their abilities for music learning, and to use their full psycho-physical potentialities to learn and play the instrument more easily, it brought about a new and relevant quality to their piano learning, and perhaps to their personal lives.

8.4. Summary of the research findings

The discussions presented in the chapter of data analysis set the context for answering the initial research question. Before referring to this, it is essential to summarise the research findings, and to compare the physical, attitudinal, and performing improvements presented by the pupils in the experimental group with the ones reported by musicians and researchers in Chapter 3 (page128). A summary of these improvements is offered in table 8.5 (next page). The research findings are presented

in the first row (piano pupils' improvements), and the musicians' and researchers' reports at the bottom of the table. The deep grey squares, in the middle of the table, represent the overlapping analyses of the research findings and the musicians' and researchers' reports (highlighted in italics).

Table 8.5 Summary of findings: comparing the research findings with musicians' reports on the Alexander Technique's effects on their playing

	Physical improvements	Attitudinal improvements	Improvements in performance
Piano pupils' improvements (research findings)	- Better physical disposition - Improved grounding (contact of the feet with the floor) - Better position of limbs - Improvement in eye's movements - Decrease of excessive movement	- Increased motivation - Improved relationship to the instrument - Improved responsiveness	- Improved control of the performance situation (ease playing) - Improved relationship to the instrument
Shared Improvements	*- Improved coordination* *- Improved posture* *- Improved sitting position* *- Improved self-awareness* *- Decreased tension*	*- Increased attentiveness* *- Increased self-confidence* *- Decreased anxiety* *- Increased mental calmness*	*- Overall performance improvement* *- Improved ability to monitor performance* *- Improved tone quality*
Musicians' reports (literature review)	- Improved health condition - Improved breathing - Improved balance - Improved hand position - Reduction of physical discomfort - Improved ability to observe oneself	- A more positive attitude towards life - Increased ability to think in activity - Reduction of nervousness - Reduction of fear apprehension - Emotional release	- Improved ability to interpret music - Improved control of phrasing - Improvements in vocal performance (less strain in the higher notes, better sound support, improved vocal tone)

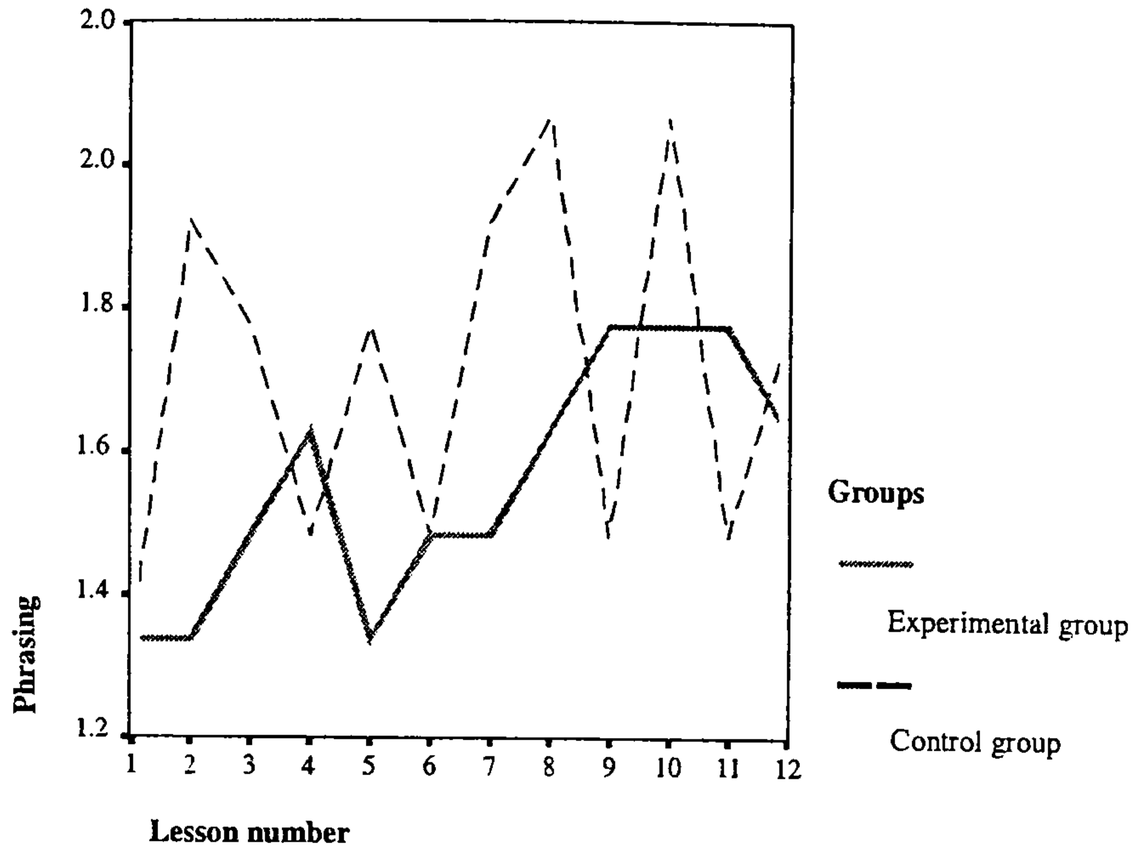


Figure 8.11: Performance: the pupils' changes in phrasing over time.

The pupils in both groups seemed to have improved their practice at home over time, as suggested by figure 8.12.

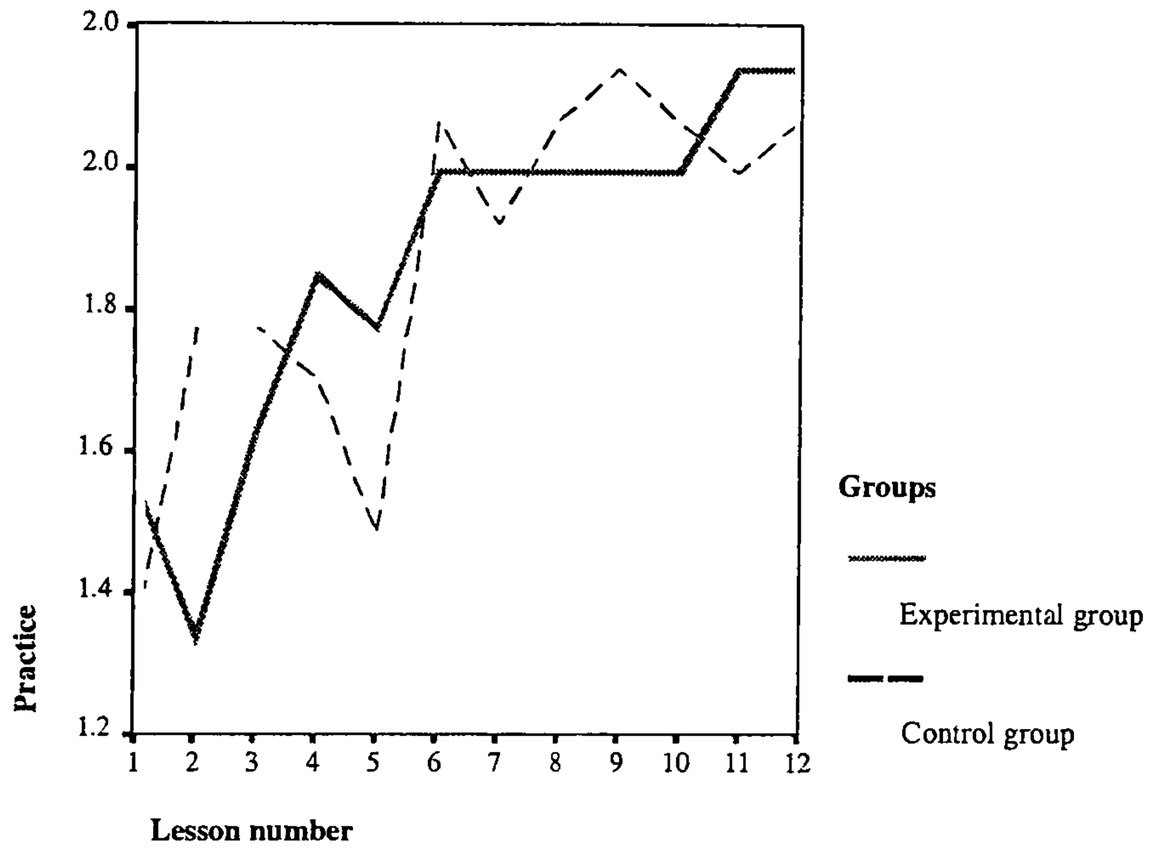


Figure 8.12: Performance: the pupils' changes in practising over time.

Interestingly, although five out of ten pupils in the experimental group had evident improvements in performance (according to many observers), they decreased their practising at home in the last two piano lessons (lessons 11 and 12, according to the teacher's written reports). Conversely, the pupils in the control group seemed to have practised more at the end of the experiment, but only two pupils out of ten showed evident performing improvements.

The common improvements suggest that, in the physical aspect, the piano pupils and musicians improved their overall coordination, posture, sitting position, and self-awareness, and presented decreased tension. In terms of attitude, they increased their attentiveness, self-confidence, and mental calmness, and became less anxious. They presented overall performing improvements, as well as improved ability to monitor performance and better tone quality.

Additionally, in the physical aspect, the findings of the present study suggest that the Alexander Technique had positive effects on pupils' eyes, helped them to be more grounded and to align the limbs in relation to the trunk, and the body in relation to the instruments, and helped them to avoid excessive movement. In terms of attitude, the Technique helped pupils to have a new relationship to the instrument, to improve their motivation and responsiveness, and in terms of performance, it helped pupils to improve their control of the performance situation.

From these initial findings, this study was not able to claim clear correlations between the observable effects of the Alexander Technique on the pupils' psycho-physical selves and their improvements in musical performance. Or perhaps the findings presented here are similar to the ones that have been already made by other researchers and discussed by Alexander writers. Nonetheless, the most relevant findings provided by the present study lie beyond the frontiers of the observable improvements that having the Alexander Technique may offer to piano pupils or any other practitioner. The study leads to the hypothesis that *the Alexander Technique helped the pupils in the experimental group to assume a new and beneficial 'psycho-physical attitude' towards their learning process, and that, potentially, in the long run, this new attitude would bring about profound changes in their performing activities, which could more easily be observed by others.* This new 'psycho-physical attitude' refers to the assimilation of a new physical, psychological, and mental attitude, which emerges as a consequence of increased self-awareness, self-control, and responsibility for one's own development.

If researchers on the Alexander Technique are not convinced that its practice represents a mere addition which helps musical performance, and allow themselves to stop merely 'end-gaining' for the sake of positive research results, they may look at what lies *behind* the observable effects of the Technique on performance. From this perspective, research on the Alexander Technique and piano performance may provide new and refreshing approaches to piano playing, teaching, and learning.

Summary and conclusion

This chapter has included a discussion of other possible reasons for the piano pupils' physical, attitudinal, and performing improvements. It has looked at possible symmetries among these aspects, combining and comparing the findings provided by the previous chapters on data analysis. Qualitative and quantitative analysis of the piano teachers' expectations concerning their pupils' musical improvements have also been offered, and followed by a comparison between the findings of the present study and the musicians' reports on the effects of the Alexander Technique on their performance.

The piano pedagogues discussed in Chapter 1 called for the achievement of a natural way of playing the piano, which involves the avoidance of excessive tension, economy of movements and effort, the adoption of good hand and sitting positions, a progressive way of learning, the emphasis on pupils' independent thinking, and the development of good habits of playing and practising the instrument. In Chapter 3, it was demonstrated that this natural way of playing the piano is not easily achieved by pianists who suffer from physical ailments and have attitudinal difficulties that spoil their performances. In this connection, the initial research findings indicated that *the Alexander Technique brought about a better integration of the piano pupils' psycho-physical selves; such a psycho-physical improvement indirectly facilitated their playing.* Thus, the Alexander Technique's effects were compatible with the principles advocated by the pedagogues, and with the requirements of piano performance.

The data analysis did not indicate that the Alexander Technique had a *direct* effect on the pupils' performances, and their specific performing improvements could not be attributed to the Technique, but probably occurred as a consequence of combined factors which were mainly related to the process of learning the instrument. If so, the Alexander Technique would be a mere additional resource for piano playing.

However, a new hypothesis was raised by the present study: *the Alexander Technique may have a strong influence on piano pupils' 'psycho-physical attitude' towards their piano learning; in the long run, the Technique will probably influence their performances in significant and observable ways.* If this hypothesis is a plausible one, the Alexander Technique cannot be seen as an additional technique for piano playing, teaching, and learning, but as a complete educational method, which embraces its own philosophical values. From an educational point of view, insofar as piano pedagogical approaches can integrate the Alexander principles, more pupils will facilitate their learning process and consequently their performance. If the Alexander principles and piano pedagogy can be combined to enhance pupils' growth, they may contribute to the achievement of better standards not only in piano performance, but also in the quality of pupils' lives.

Chapter 9

Discussion and Conclusion

Introduction

The previous four chapters offered a comparative analysis across the multiple data sets provided by the observers. The research findings and discussions offered in these chapters suggested that the Alexander Technique had positive effects on the piano pupils' learning processes, and consequently helped them to enhance their performances. In addition, the observations of the piano lessons made by the researcher and the discussions offered by the observers, revealed the piano teachers' main pedagogical difficulties and concerns. Some of these difficulties lay within the domain of piano pedagogy, but some of the piano teachers seemed not to be fully prepared to deal accurately with the pupils' specific musical and technical problems. The teachers themselves were especially concerned about the lack of musical understanding shown by many pupils. The pupils' psycho-physical difficulties, however, lie beyond the domain of piano pedagogy, as piano teachers are not trained in the appropriate skills to take care of pupils' psycho-physical misuses (for instance, postural problems and excessive tension).

In the light of the Alexander principles, how can piano teachers help pupils to deal with their psycho-physical difficulties? How can they help pupils to develop technical skills in connection with musical understanding which leads to an expressive way of playing the piano? In order to answer these questions, reflections

on how the Alexander Technique may enrich piano teachers' pedagogical practices and their working philosophy follow.

9.1 Potential contributions of the Alexander Technique principles to piano teaching and learning

With reference to the piano pedagogues' working principles as summarised in Chapter 1 (page 33) it was made explicit that traditional piano pedagogy could be questioned in the light of the Alexander Technique principles (Chapter 2, page 99). It was claimed that piano pedagogues have failed to consider that piano pupils are psycho-physical selves, and that their manner of use will influence their piano playing for good or ill. It was also claimed that the pedagogues have emphasised oral teaching approaches without addressing the necessity of helping pupils to develop a direct sensory or kinaesthetic experience concerning their movements at the piano. Finally, it was argued that, instead of considering wider educational aspects of piano teaching and learning, piano pedagogues have emphasised the 'end-gaining' aspects; the pressure to achieve positive performing results, however, may enhance physical difficulties or cause physical injuries , as well as psychological difficulties in pupils.

Taken together, the teachers' pedagogical difficulties and concerns recalled above and the limitations found in piano pedagogy can be reviewed in the light of the Alexander Technique principles. Whether or not teachers have had the Alexander practical experience, the principles underlying the Technique offer a philosophical foundation that may encourage them to question their pedagogical approaches and rethink their approaches to dealing with pupils' psycho-physical and musical difficulties.

It must be borne in mind that the suggestions offered in this section cannot be considered original in themselves. Other researchers, music educators, piano pedagogues, and Alexander teachers have advocated similar ideas, as will be seen below. However, this section intends to reinforce existing ideas, as well as evoke new

ones, related to the literatures on piano pedagogy and on the Alexander Technique, and to the findings that have arisen from the study. Three topics will be discussed here: (9.1.1) a holistic view of piano teaching and learning; (9.1.2) questioning the 'end-gaining' mode of attainment; and (9.1.3) emphasising informal practices of learning.

9.1.1 A holistic view of piano teaching and learning

The term dualism may refer to contradictory concepts, or oppositions. But more importantly, it entails the idea of separation and exclusion. As many others in his time and now, Alexander questioned fragmentary ways of thinking, acting, and living, which generate dualisms between body and mind, practice and theory, and action and conception. Alexander (1923: v) exemplifies his point:

> Theories and beliefs faithfully held have failed when brought to the test of actual practice…The bridging of the gap between theory, with its associated beliefs, and practice, depends at every step upon the human element, for it is the nature of the reaction of the individual engaged in the task of this bridging…that will determine the measure of success or failure.

In Alexander's perspective, the manner of the use and functioning of the psycho-physical self is an all-important consideration in bridging the gap between dualisms. The psycho-physical self needs to work as an integrated and coherent system in all situations. When theory and practice, and conception and action, are conducted according to the principle of psycho-physical integration, the best possible results in any activity can be attained.

In this perspective, piano pupils' bodies are not to be considered as a collection of fragments - arms, hands, fingers - but as part of their psycho-physical totalities. A

badly coordinated organism does not relate its actions to a total pattern of coordination (Ben-Or, 1995: 92), and may generate a misleading conception of how to execute such actions. As the Technique enhances self-awareness, Alexander practitioners recognise their own fragmentation; they can reorganise their feelings and beliefs about themselves into a coherent system (Jones, 1976: 166). This coherent system involves the cultivation of an experimentally-orientated 'mental attitude', which allows practitioners to conceptualise ideas and put these ideas into action in coherent ways, free from the barriers of habit. If piano teachers wish to discard dualistic approaches to piano teaching, and to embrace a holistic piano pedagogy, they are invited to reflect on the following points.

9.1.1.1 The adoption of a holistic approach to piano teaching and learning

As mentioned earlier in this thesis, piano pedagogues tend to adopt a teacher-centred approach, in which they rely on their own teaching methods; they also tend to adopt a subject-centred approach which emphasises the acquisition of musical knowledge and skills. Few pedagogues emphasise pupils' development, adopting a pupil-centred approach. Something essential is missing from the piano pedagogues' approaches. As Neuhaus (1973: 24) states, the work developed in the piano classroom should be centred on music; but more than that, it should be centred on human beings, the agents who give life to music. Within the context of piano lessons, the relationship between the diverse aspects of musical training happens as a consequence of the attitudes of teachers and pupils, the relationship established between them, and through the musical experiences they share and develop together. Thus it is important to carefully consider the quality of the interactions that happen within the context of piano lessons, between teachers and pupils, pupils and peers, pupils and music, pupils and the instrument, and pupils and the environment.

The holistic approach that characterises the Alexander Technique's pedagogy would favour the formulation of an interactive or holistic piano pedagogy, in which the three approaches emphasised by the pedagogues (the teacher, the subject, and the pupil-

centred approaches) would be taken as complementary ways of acting. Such a holistic pedagogy would be possible if attention was paid to the interactions between the 'whole-teacher's psycho-physical self' and the 'whole-pupil's psycho-physical self' in connection with the 'whole-music'. For this to happen, however, the elimination of teachers' and pupils' harmful habits and stereotyped responses, and the consequent co-ordination of their postural organism on a plane of constructive and conscious control, would play an important role in piano lessons, as well as in the development of their self-awareness. Thus piano pedagogy would need to assume an educational status. As F.M. Alexander (1923: 73) states:

> Our first consideration …in all forms of education must be in regard to securing for the child the highest possible standard of psycho-physical functioning during his attempts to master the different processes which make up the educational scheme. In this way the child will make a fair start, and, what is more to the point, he will continue to improve the conditions involved, hand in hand with his efforts as a pupil in all other spheres of activity.

The above considerations lead us to the next point of reflection. A conception of piano technique is required that integrates the development of technical skills and music making, and considers this development in connection with the good use and functioning of pupils' psycho-physical selves.

9.1.1.2 Technique and musicality as one united entity

Taking into consideration the concept of wholeness advocated by Alexander, the different schools of piano teaching could be seen in a new light. These differences can be unified, as the approaches to the construction of a fine piano technique - weight technique and finger technique - are considered as part of a broader view of technique which proceeds from the entire organism, the 'primary control of the use of the self' being the element which unifies all the segments of the body, thus also unifying the way to understand piano technique. In other words, the pianists' body segments and

joints, as well as their movements, are connected with and proceed from their primary control. Ben-Or (1995: 85) questions the tendency of some piano pedagogues, whose approaches lead pupils to use particular segments of the body as if they were separate from the whole:

> All these [approaches] direct the player's attention to one or more separate parts of the mechanism of piano playing without him considering these details in the context of himself as one indivisible whole. It is precisely this 'wholeness' of the player that should embrace and indirectly modify his approach, regardless of what the particular details of it are. If for example a piano method depends on curved fingers, another on them being kept flat, or on the hands being positioned in any particular way - with the learning of the Alexander Technique each of these details will acquire a new quality, another dimension of freedom and unity of the whole person playing.

9.1.1.3 The integration of musical understanding and physical gestures

In Chapter 1 (page26), it was shown that many pedagogues claimed that piano technique and music are one indivisible entity. Holistic approaches to musical training and music making, which consider the association of musicality and movement, and of musicality and the acquisition of technical skills, have been investigated by many music educators, especially by Jaques Dalcroze; and more recently by Shiobara, (1993), Juntunen & Westerlund (2001), and Burnard (1999). These associations can be reviewed in this study in the light of the Alexander principles.

Dalcroze believed in a holistic musical training in which musicians need to integrate mind and body, as the perception of musical elements depends on pupils' awareness of their own kinaesthetic senses, and on a balanced body-mind state (Shiobara, 1993: 102; Juntunen and Westerlund, 2001: 208). To Dalcroze, whilst the conceptual musical skills are built into the mind, the physical coordination necessary to instrumental playing is built into the body (Shiobara, 1993: 103-4). However, he

realised that this ideal condition rarely exists in children and adults (Shiobara, 1993: 104). He thus created the Dalcroze exercises, which aimed at harmonising the body-mind functions, preparing musicians to interact with changing musical situations, such as change in tempo, without interrupting the musical discourse (Juntunen and Westerlund, 2001: 208). Dalcroze (in Shiobara, 1993: 109) himself explains:

> Rhythm, like dynamics, depends entirely on movement, and finds its nearest prototype in our muscular system. All the nuances of time – allegro, andante, accelerando, ritenuto – all the nuances of energy – forte, piano, crescendo, diminuendo – can be "realised" by our bodies, and the acuteness of our bodily sensations.

Dalcroze's ideas are congruent with the principles advocated by Alexander, as kinaesthetic awareness is an essential aspect and a most typical outcome of the Alexander practice. However, in the light of Alexander's principles, musicians can enrich the concept of 'movement'. In the Alexander practice, the appropriate physical movement emerges from the inhibition of excesses of any kind (for instance, tension and effort), and from the practitioners' conscious direction, 'an energizing which *precedes* and *accompanies* ordinary muscular activity' (Alcantara, 1997: 59, my italics). Thus physically balanced and well-coordinated movements should emerge from conscious direction, thought and intention. A similar concept of movement can also be applied to music itself: music involves movement in time, which results from the performers' muscular activity, and is produced by their conscious intention.

From the perspectives offered by the ideas of Dalcroze and Alexander, piano technique could be developed together with the formulation of a repertoire of physical gestures which integrate a mental and aural sound image with movement. The integration of physical gestures and sound images would constitute musical *Gestalten*. These *Gestalten* could be used by piano pupils in the execution of expressive musical patterns from the beginning of their learning processes (for instance, an ascending melodic movement in *crescendo*; a homogeneous glissando; a sequence of clusters executed in different dynamics). In the Alexander Technique's perspective, for such

mental and aural images to be fully developed, and for the physical gestures to be balanced and coordinated, any physical action would be initially *inhibited*, so that pupils would have time to understand the quality of action which they would need in order to obtain the desired sound. In so doing, pupils would be 'thinking in activity' (Dewey in Alexander, 1932: 42); they would *consciously direct* their actions, choosing the best possible 'means-whereby' to execute each action. Excessive 'doings' - movements, and effort - would be avoided, and a conscious kinaesthetic sensation of the required movements would be encouraged. In addition, piano pupils would be always encouraged to listen to their own playing and be 'conductors' of their own performances.

Piano pedagogues provide ideas that reinforce the ones presented above. According to Cançado (2002: 13), there is a 'dancing movement' of the pianists' hands on the keyboard which suggests fluency; the movements are directly connected with the quality of tone that is being produced, as well as with phrasing, musical tensions and rests. Cançado (2002: 13) explains:

> ...your hands are the agents that conduct a message. Hands are instruments for you to express musical language. You are the one who creates the image, because the sound is inside you, and your gesture defines the execution of this sound. Some gestures finish a musical phrase; others give continuity to musical movements. When you do so, when you conduct the gesture, gesture and sound are coherent.

Piano pupils' ability to establish relationships between physical movement and sound production can perhaps enhance their musical understanding. If so, from the very beginning, technical skills and musical understanding should be developed simultaneously, and in connection with physical-musical gestures. The principle of inhibition may help pupils to stop trying to attain musical ends without having previously understood the meaning that each musical passage conveys. The principle of direction can help them to intentionally and consciously connect technical means

and musicality, encouraging them to always search for expressive ways of playing the piano.

9.1.2 Questioning the end-gaining mode of attainment

The desire to attain a musical end is a positive principle in piano teaching and learning, as it may enhance pupils' motivation; they can overcome their difficulties when they are stimulated by the enthusiasm of learning what they want to learn. The danger arises when their attention is exclusively focused on the gaining of specific ends. As stated before, piano pedagogy seems to emphasise an 'end-gaining' mode of attainment in which the musical result and successful performance are the main goal. However, in Alexander's perspective, 'end-gaining' is a habitual attitude which needs to be changed. Alexander practitioners take care of the 'means-whereby' these ends should be attained; the appropriate preparation for executing each action is the focus, not the result. Dewey (1978: 72) put it thus:

> Means are means; they are intermediates, middle terms. To grasp this fact is to have done with the ordinary dualism of means and ends. The "end" is merely a series of acts viewed at a remote stage; and a means is merely the series viewed at an earlier one. The distinction of means and end arises in surveying the course of a proposed line of action, a connected series in time. The "end" is the last act thought of; the means are the acts to be performed prior to it in time. To reach an end we must take our mind off from it and attend to the act which is next to be performed. We must make that the end (Dewey, 1978: 72).

And he continues:

> We must change what is to be done into a how, the means-whereby. The end thus re-appears as a series of "what nexts", and the what next of chief importance is the one nearest the present state of the one acting. Only as the end is converted

> into means is it definitely conceived, or intellectually defined, to say nothing of being executable…Aladdin with his lamp could dispense with translating ends into means, but no one else can do so (Dewey in Jones, 1976: 103).

The above considerations may guide piano teachers to rethink their pedagogical approaches as follows.

9.1.2.1 'Inhibiting' teachers' and pupils' expectations

The 'means-whereby' principle may encourage piano teachers to reinforce their role as educators, questioning the 'end-gaining' mode of attainment. Through the inhibition of their anxieties and expectations concerning their pupils' progress, piano teachers can encourage them to inhibit their own expectations in relation to performance, and focus on the process of learning the instrument. If pupils are able to get involved with their learning, they can appreciate each step of this process, and value the conquest of new skills and knowledge. From such a process, the best possible final results will probably emerge. For these reasons, expectations to attain ends should be, perhaps, taken as secondary, when one is dealing with education. Besides, the experience of learning to play an instrument can be highly relevant to pupils' lives in all respects, even if they are not interested in becoming professional musicians. On the other hand, if pupils become musicians, they will need to work more and more on the 'means-whereby' in order to attain the best level of quality in their work, with less anxiety, tension, and effort.

9.1.2.2 Avoiding the acquisition of skills at the expense of the good use of the psycho-physical self

Once more, the principles of 'inhibition' and 'means-whereby' could help piano pupils to avoid practices that may cause harm to their organism. Firstly, as many

pedagogues and researchers discussed in Chapter 1, pupils would need to avoid engaging in trial-error practising and such methods as unconscious repetition. As Holland (1978: 40) states:

> ...we all have to learn what Alexander learnt, to change our own use of ourselves, to develop an attitude of not desperately trying to achieve a result at any cost, but instead to care about taking time to think about how we are going to achieve that result.

Secondly, it is essential for pupils to be aware of their overall pattern of use and coordination when practising the instrument (Ben-Or, 1995: 93). Pupils may be able to recognise and avoid harmful patterns of use if practising is based on self-awareness rather than on a trial-and-error plan (Jones, 1968: 12). This position reinforces the one adopted by some pedagogues, discussed in Chapter 1, who recommended that piano pupils should 'feel' what they are playing; they need to associate 'sensation' with the execution of specific passages in order to avoid excessive tension and effort. However, considering the Alexander principles, one can claim that, if pupils' sensory appreciation were based on harmful habits of use, their kinaesthetic senses would become untrustworthy. If so, pupils would tend to perpetuate their habitual misuses when playing the piano, reinforcing such misuses. For this reason, instead of emphasising 'what to do' and 'how to do', piano teachers should request their pupils to 'stop doing the wrong things', to examine their own psycho-physical conditions, and only then to engage in the next piano activity.

9.1.3 Emphasising informal practices of learning

To refer back to what has been discussed previously (Chapter 3), 'formal music learning' refers to the teaching practices adopted by instrumental music teachers and to pupils' experiences of learning through such practices. 'Informal music education' includes various approaches to learning music outside the context of music classrooms (Green, 2001: 16). Informal learning favours musical enculturation and

includes oral-aural practises such as listening, watching, imitating, 'messing about', playing favourite tunes from scores, playing by ear, improvising, and composing (Campbell, 1991: 103; Sloboda, 1996: 183; Sloboda *at al*, 1996: 301; Green, 2001: 177).

Formal teaching and learning practices were emphasised by the piano teachers who participated in this study, including the acquisition of piano repertoire. It is important to re-emphasise that the research process probably interfered with the piano teachers' approaches, as they tended to emphasise repertoire, so that their pupils would be prepared to record the pre-and post-tests. But in any case, informal practices would, perhaps, facilitate the pupils' enculturation within different musical styles, and favour the development of their musicality and creativity.

If piano teachers intend to help their pupils to develop musical and technical skills taking into account the use and functioning of their psycho-physical selves, informal practices would be a most appropriate means to adopt in the introduction and development of such skills. The Alexander Technique is a method for engendering new kinds of experiences, (Mills,96: 11) Informal practices, especially improvisation and composition, may guide pupils into inventive musical experimentation. Thus, in a piano lesson, informal musical practices and the Alexander Technique principles would represent a good combination, as both are methods of experimentation.

9.1.3.1 Emphasising improvisation and composition

Whether improvisation and composition are regarded as two different activities, or are considered to be interwoven, complementary or even indistinguishable, they have been recommended by many researchers and music educators as an essential part of a

comprehensive music education.[1] Some piano pedagogues indicate the importance of improvisation and composition in piano playing.[2] Improvisation invites the player to engage 'in a process of focussing on a continuing impulse of ongoing activity in which s/he is *thinking in activity* [my italics]: improvising acts as 'the creative catalyst to externalise musical thoughts' (Burnard, 2002: 16). On the other hand, to compose, pupils need to think reflectively about the relationships within the whole piece in order to form and revise musical ideas (Burnard, 2002: 16). Both improvising and composing are strongly related to the acquired performing knowledge and skills (Swanwick and Franca, 1999: 15-6; Burnard, 1999: 160), and may be means for developing performing knowledge and skills (Green: 2001).

As a piano and Alexander teacher, I myself have been attempting to put into practice the ideas provided in this section. Illustration of this attempt can be found in Parizzi and Santiago, 1993 (see Chapter 4), and Santiago, 2001 (see Chapter 4 and the CD Rom).

9.2 Research contributions

In reflecting back on the research process and its findings, some contributions of the present study to the relevant fields come into view. The first refers to the theoretical framework provided by the present study to explain the effects of the Alexander Technique on piano playing. Such a framework has not been found in previous research, so it may serve as a point of reference for further research on the Alexander Technique and instrumental playing. Besides, Alexander teachers and practitioners may benefit from the relationships established between the Technique and the work

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1. See Paynter and Aston, 1970; Paynter 2000; Swanwick and Tillman, 1986; Swanwick and Franca, 1999; Cambell, 1998; Burnard 1999, 2000, 2002a, 2002b; MacMillan, 1999; Green, 2001; Brophy, 2002.

2 See Whiteside, 1969: 23,34, 159-60; Cançado, 2002; Hazan, 2002: 19; Menegale, 2002: 4, 17.

about human physiology by Bienfait (1995), and between the Technique and the theories of human psychology by Lowen (1982) and Keleman (1992).

A second contribution refers to research strategies. The qualitative approach to data collection and analysis, which included a triangulation of methods and observers, seems to have favoured a better understanding of the effects of the Alexander lessons on the piano pupils. The many voices that took part in this study raised issues that surpassed the researcher's original expectations. Moreover, the richness and appropriateness of their comments on and explanations for the observed phenomena have not been found in any other study of music and the Alexander Technique.

Other contributions of this study indicate the implications that the research may have for piano pedagogy. Firstly, the research process itself seemed to have a positive effect on the piano teachers and the pupils, given their high levels of motivation and interest in participating. More importantly, the awakening of the teachers' consciousness concerning their pedagogical potentialities and difficulties, was a positive outcome of the study, as the music school's principal and the teachers themselves confirm. After concluding their participation in the research, they sent the following jointly written message to the researcher:

> The research conducted in the *Villa-Lobos Núcleo de Educação Musical* had an immediate impact on many aspects of the piano teachers' work. They started paying more attention to the musical aspects of performance, as well as to the technical and motor abilities that pupils need to develop within the context of piano lessons. Additionally, we are looking for a repertoire suitable for the musical development of each pupil. We started engaging in frequent meetings in order to question and review our pedagogical strategies, to develop different approaches to teaching the piano in groups, and to discuss other issues related to the piano lessons. Finally, we are attempting to improve our own eyes and ears, so that we can work in music education in a more conscious and efficient way [message sent to the researcher by the principal and the piano teachers in the *Villa-Lobos Núcleo de Educação Musical*, Belo Horizonte, Brazil, 29 March, 2003].

Secondly, the potential contributions of the Alexander principles to piano pedagogy, presented above, may open areas for further discussion, useful to these and other piano teachers, and may provide new frames of reference for piano teaching and learning. Hopefully, this study will encourage piano teachers to 'improve their own eyes and ears', and to consider a more careful use of the body in piano playing, which would, in the long run, help teachers to develop an injury-preventive piano pedagogy.

Finally, a major contribution of the present study to both the Alexander Technique and piano pedagogy is to give emphasis to the educational status that they deserve and indeed have. The Alexander Technique provides to practitioners improvements in the use and functioning of their psycho-physical selves; piano pedagogy helps people to perform piano pieces. But both provide much more than 'effects' or 'performing results': they endow people with new 'skills for life' (Alcantara, 1999).

9.3 Areas for further research

Research on piano performance and the Alexander Technique explores uncharted terrain and offers serious challenges, since it involves numerous, unexpected, and at times unmanageable variables, as the present study has shown. Perhaps, for this reason, research on this topic has been infrequent and sometimes insubstantial. Further research is thus required, not only to review, question, or substantiate the findings of the present study, but also to promote further reflection and a deeper understanding of this complex relationship.

The discussions included in the present study have evoked some conjectural hypotheses for future study. For instance, it seems important to pay attention to the effects of the Alexander Technique on piano pupils' learning processes, instead of looking at its effects on their performance in isolation. It is likely that this kind of

research will need to include piano teachers and pupils who are interested in their personal growth, and willing to improve their overall psycho-physical use and functioning. A longitudinal study, possibly with the inclusion of in-depth case studies, would give time to the participants to experience the Alexander principles more deeply, and to researchers to observe the effects of the Alexander Technique on people in many aspects of their lives over time. However, if longitudinal studies are conducted, the Alexander experience provided to participants will be, perhaps, blended together with their piano playing in such a way that makes it difficult to separate its effects on performance from those of performance itself. This poses additional but interesting challenges for longitudinal studies in the topic.

A second hypothesis that has been evoked by the present study proposes the investigation of injured musicians, and musicians who present psycho-physical difficulties, as the research findings suggest that the Alexander Technique might help them to overcome their psycho-physical misuses and difficulties. Case studies would be again a suitable research strategy for such endeavour. A third and final hypothesis is related to the potential benefits that the Alexander principles may bring to piano pedagogy. In this area, research that provides Alexander lessons for teachers would be needed, and a detailed investigation of the effects of the Technique on their teaching skills would be required.

Further investigation of the possible explanations for the effects of the Alexander Technique on piano performance is also needed. Interesting theories exist that may be adopted in future research to enrich the theoretical frame developed by the present study, or even better, to develop views that oppose the ones presented here. In any case, a great deal of work still needs to be undertaken before fundamental issues in the implementation of piano playing, teaching, and learning in connection with the Alexander Technique can be fully understood. If the aims set out in the present study are to amount to more than pious hopes, it is desirable that such research can be conducted in the future, with the thoroughness that the issue deserves.

Concluding comments

Both piano playing and the Alexander Technique are demanding practices, which require years of dedication, patience, and constant persistence. Piano performance constitutes one of the most complex activities developed by human beings, demanding refined motor coordination, specific domain knowledge and physical, psychological and mental disposition, and a continuum of formal and informal training. The rich and vast repertoire, as well as the models offered by great pianists, invite us to pursue the highest possible levels of musical achievement. Not surprisingly, we piano teachers transfer to pupils our personal expectations, in the hope that some of them will play well, without being threatened by the challenges that such activity imposes on us all.

The Alexander Technique invites us to change lifetime harmful habits of use of the psycho-physical self. This is a remarkably difficult task, which would only be assumed by individuals who are committed to their own growth. It demands 'a fundamental revision in the way the individual thinks about himself, and if it is to be accepted within society an even more fundamental collective revision of attitudes by doctors, psychologists and teachers among many others will be necessary' (Gelb, 1982: 21).

In considering the challenges that piano playing, teaching, and learning entail, one may wonder why teachers would be interested in combining their activities with another method as demanding as the Alexander Technique is. However, recalling the jointly written message sent by the piano teachers above, it is clear that they benefited from participating in this research. Besides and most importantly, reflecting back on the research process, and recalling the short-term benefits of the Technique on the piano pupils' psycho-physical development, and estimating its potential long-term benefits, it is possible to suggest that the Alexander principles would provide for teachers 'an opportunity to assess the deeper levels of well-being that could accrue to

the pupils who have been educated to be more kinaesthetically in tune with their inner self' (Nuttal, 1999a: 100).

If piano teachers intend to develop their work based on 'end-gaining' modes of attainment, they will probably be happy with their pupils' musical achievements without considering the negative impact that such achievements may have on the pupils' organisms. However, as educators, piano teachers have a task which exceeds the musical training of their pupils. To be concerned with pupils' growth, joyfulness, self-assurance, self-realisation, and integrity seems to be part of this task. How can piano pupils preserve their integrity if their bodies have already been 'devastated by life', if their attitudes reflect fear, insecurity, and distress, and if they are not being encouraged to educate themselves through a 'conscious guidance and control' which is their 'supreme inheritance'? For these reasons, as Alexander (1923: 66) states, 'we must first take into consideration the standard of psycho-physical self functioning of the human being whom we are to educate, both today and in what we hope is to be a progressive future'. In so doing, we piano teachers will hopefully become better teachers and true educators.

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Chapter 4

Figure 4.1 *Pre-and post-test design*

Campbel, D. T., and Stanley, J. C. (1973) *Experimental and Quasi-Experimental Designs for Research*, Chicago: Rand McNally College Publishing Company, pp. 13.

Reference of pictures

Chapter 2

Picture 2.1 *The pulling back and down of the head*

Barlow, W. (1973) *The Alexander Principle*, London: Victor Gollancz, pp. 25.

Picture 2.2 *F. M. Alexander with hands on man - sitting and standing*

STAT Archives - Picture Catalogue

Picture 2.3 *Woman with hands on man lying down on semi-supine*

Gelb, M. (1981) Body *Learning*, London: Aurum Press, pp. 40.

Chapter 3

Picture 3.1 *Cervical lordosis*

Barlow, W. (1973) *The Alexander Principle*, London: Victor Gollancz, pp. 30.

Picture 3.2 *Lumbar lordosis*

Bienfait, M. (1964) *Rééducation du Tronc,* Paris: Maloine, pp.109.

Barlow, W. (1973) *The Alexander Principle*, London: Victor Gollancz, pp. 45.

Sobotta, J, and Figge, F. (1977) Atlas of Human Anatomy (Vol. 1), Baltimore, Munich: Urbam & Scharzemberg, pp. 15.

Picture 3.3 *Dorsal and lumbar kiphosis*

Bienfait, M. (164) *Rééducation du Tronc,* Paris: Maloine, pp.109, 123.

Picture 3.4 *Dorsal kiphosis in schoolchild*

Barlow, W. (1973) *The Alexander Principle*, London: Victor Gollancz, pp. 45.

Sobotta, J, and Figge, F. (1977) Atlas of Human Anatomy (Vol. 1), Baltimore, Munich: Urbam & Scharzemberg, pp. 15.

Picture 3.5 *Scoliosis with spine rotation and lateral flexion*

Bienfait, M. (1964) *Rééducation du Tronc.* Paris: Maloine, pp.126.

Sobotta, J, and Figge, F. (1977) Atlas of Human Anatomy (Vol. 1), Baltimore, Munich: Urbam & Scharzemberg, pp. 15.

Picture 3.6 *'Overbound' and 'underbound' structures*

Keleman, S. (1992) *Anatomia Emocional*, São Paulo: Summus Editorial, pp. 88-9.

Appendix A

Picture A.1 F. Matthias Alexander in monkey with children.

STAT Archives - Picture Catalogue.

Picture A.2 Walter Carrington with hand on the back of the chair.

Carrington,W. and Carey, S. (1992) *Explaining the Alexander Technique - The Writings of F. Matthias Alexander*, London: The Sheildrake Press, pp. 92.

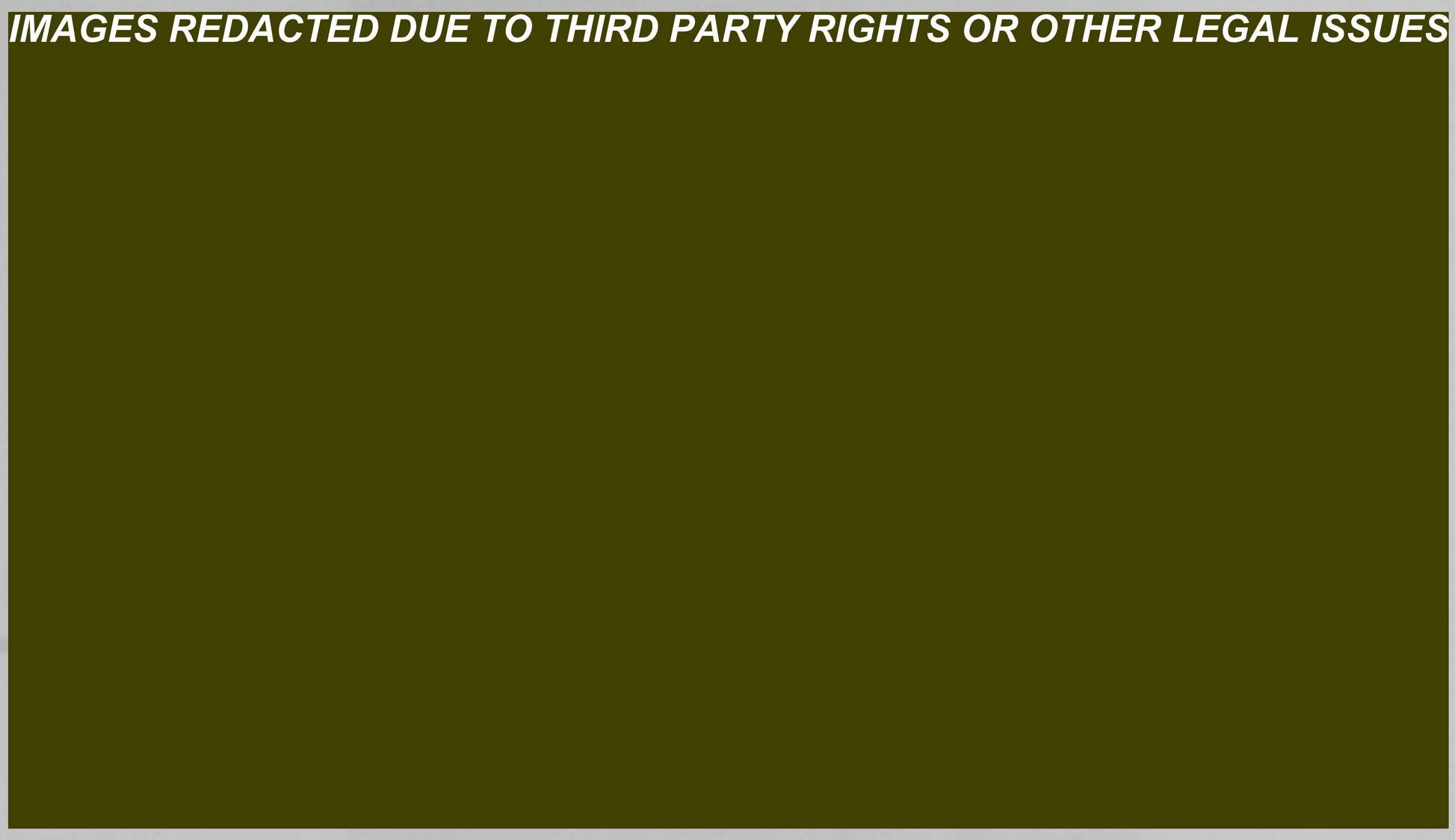
Appendix A

Procedures of the Alexander Technique

A. 1 Monkey position

The monkey is an intermediate position between a crouch and the totally upright position. In order be 'in monkey', practitioners bend the knees, incline the trunk forward, and establish a good connection with the ground, so that the arms can be completely free to move. This position provides a good opportunity for the lengthening of the spine, widening of the back and chest, and freeing of the pelvic area.

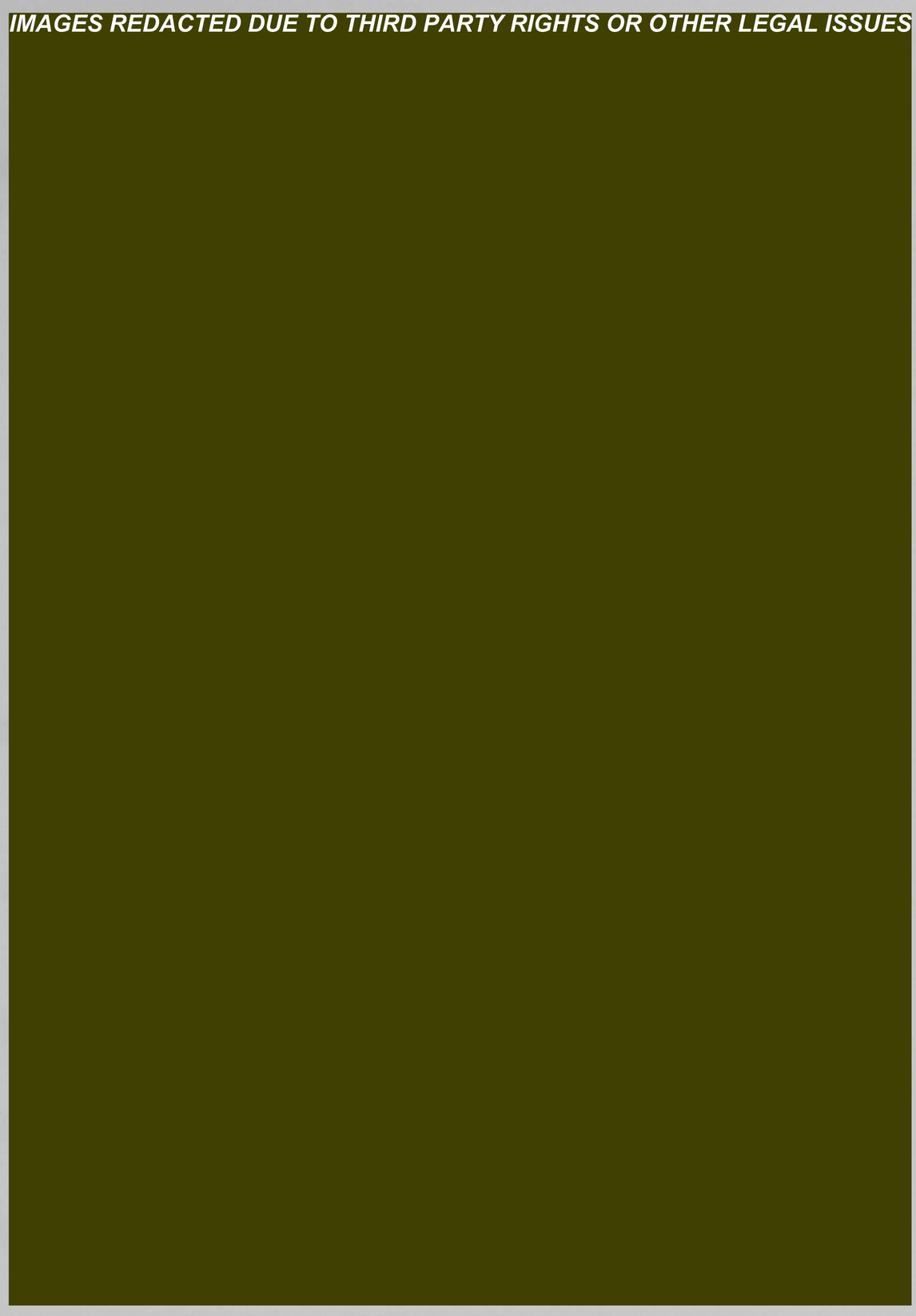
The monkey attitude helps Alexander teachers to guide students to review their anti-gravity responses of seeking vertical balance (Nicholls, 1991: 68). It is an easy way to get the lower back working, producing 'a state of plastic tonus throughout the extensor system' (Macdonald, 1989: 75). It is especially useful when people need to bend over a sink or table without exhausting the back and the legs (Jones, 1976: 69-70). 'Monkey' is a highly effective position, in the development of general co-ordination, assisting practitioners to examine the existing levels of tension (Alcantara, 1997: 100). It also encourages a series of antagonistic pulls within the musculature: the head goes away from the hips; the hips go away from the knees; the knees go away from the ankles, so that lengthening of the organism in opposite directions is stimulated (Robb, 1999: 179).



Picture A.1: F. Matthias Alexander in monkey with children. *Source: STAT Archives.*

A. 2 Hands on the back of the chair

'Hands of the back of the chair' refer to a position in which practitioners bend over a chair in monkey position, in order to put their hands or fingertips on the rail of the chair. It is also common to put hands on the back of the chair whilst seated. In this position, Alexander practitioners pay attention to the directions, and think of the shoulders expanding away from each other, in antagonistic pulls, so that the chest and back can also open and widen; the feet are grounded on the floor in contrast with the head, which goes up and forward. The general idea is to expand all the segments of the body as much as possible. Carrington (2001: 21) claims that 'hands on the back of the chair' is an essential procedure for Alexander teachers having a preliminary experience of putting hands on other people.



Picture A.2: Walter Carrington with hand on the back of the chair. *Source: Carey and Carrington, 1992: 92.*

Appendix B

Pupils' Questionnaires and Teachers' Observation Form

B.1 Pupils in the experimental group - questionnaire 1

Your name is .....

Please, answer the following questions:

1. Did you like the Alexander lessons? Yes ☐ No ☐

   Please, write down three reasons for your answer.

   ■ _____

   ■ _____

   ■ _____

2. Do you think that the Alexander lessons are:

   Too long ☐ Too short ☐ Have a good duration ☐

3. Describe three activities developed during the Alexander lessons.

   ■ _____

   ■ _____

   ■ _____

4. Did you especially enjoy any of these activities? Yes ☐ No ☐

   If your answer is yes, which ones?

   _____

   _____

   _____

B.2 Pupils in the experimental group - questionnaire 2

Your name is .....

Please, answer the following questions:

1. In your opinion, what are the Alexander lessons for?

2. Do you think that the Alexander lessons helped you to improve your piano playing? Yes ☐ No ☐

   If your answer is yes, explain why.

3. Do you fell tense areas in your body? Yes ☐ No ☐

   If your answer is yes, which ones?

4. Could you release some of these tense areas in the Alexander lessons?

   Yes ☐ No ☐ If your answer is yes, which ones?

B.3 Pupils in the control group - questionnaire 1

Your name is: .....

Please, answer the following questions:

1. Did you like the sessions about mythology? Yes ☐ No ☐

   Please, write down three reasons for your answer.

- _____
- _____
- _____

2. Do you think that the mythology sessions are:

   Too long ☐ Too short ☐ Have a good duration ☐

3. Point out three interesting topics that emerged in the sessions on mythology.

- _____
- _____
- _____

4. Did you especially enjoy any of these topics? Yes ☐ No ☐

   If your answer is yes, which ones?

_____

_____

_____

B.4 Pupils in the control group - questionnaire 2

Your name is .....

Please, answer the following questions:

1. In your opinion, what are the sessions on mythology for?

2. Do you think that the sessions on mythology helped you to improve your piano playing? Yes ☐ No ☐

   If your answer is yes, explain why.

3. Do you think that the sessions on mythology enriched your life in any way?

   Yes ☐ No ☐

   If your answer is yes, what have you learned from these sessions?

B.5 Teachers' observation form

Pupil:

Teacher:

Pupil's physical conditions

	Very good	Good	More or less	Poor	Bad
Posture of body and hands	☐	☐	☐	☐	☐
Physical level tension	☐	☐	☐	☐	☐

Comments:

Pupil's attitude

	Very good	Good	More or less	Poor	Bad
Ability to focus on the activity	☐	☐	☐	☐	☐
Mental calmness	☐	☐	☐	☐	☐
Self-confidence	☐	☐	☐	☐	☐
Motivation	☐	☐	☐	☐	☐

Teacher's Observation Form - continuation

Comments:

Pupil's piano performance

	Very good	Good	More or less	Poor	Bad
Ability to monitor performance	☐	☐	☐	☐	☐
Tone quality	☐	☐	☐	☐	☐
Rhythm quality	☐	☐	☐	☐	☐
Phrasing	☐	☐	☐	☐	☐
Dynamics	☐	☐	☐	☐	☐

Comments:

The effects of pupils' practice at home in the piano lessons

	Very good	Good	More or less	Poor	Bad
Practice	☐	☐	☐	☐	☐

Appendix C

The Pilot Study

Introduction

This Appendix presents the pilot study, which was carried out in the second semester of 2002, from August to mid September, using the same methods adopted in the main study. The purposes of the pilot study were: (1) to review the research question; (2) to test the research design and methods of observation; (3) to give the researcher an opportunity to develop the necessary skills to conduct the main study and analyse the data later on; (4) to clarify the conceptual framework which was being developed in the light of the literature review, and to favour the emergence of links between the theoretical and the empirical aspects of the research.

Firstly, this appendix will offer a general description of the study, followed by data analysis which includes discussions on the physical, attitudinal, and performing changes shown by the piano pupils, a comparison between the most significant changes in pupils within pairs, possible reasons for the changes found in pupils in the experimental group and a summary of findings. The conclusion discusses the advantages of the methods employed to collect the data and the limitations and difficulties found during the conduct of the study.

C.1 Description

Six girls and two boys, aged between nine and eleven, were chosen by the music school's director and matched as closely as possible according to the criteria pre-established for the research. The eight pupils formed four matched pairs and were randomly assigned to the experimental and control groups. Three piano teachers gave lessons to the pupils and one Alexander teacher worked with the pupils of the experimental group. Each pair of pupils played a similar piece, in order to provide a basis for comparing the changes in performance between the control and experimental groups. The pupils' codenames and shared piano pieces were as follows:

Teacher A:

Pair 1: Ann (experimental group 1) and Amanda (control group1) - age 11
Pair 3: Carla (experimental group 3) and Cynthia (control goup 3) - age 9
Common piano piece: Dimitri Kabalevsky, 24 Little Pieces op. 39, pieces 1, 2, and 3 - 'A Little Tune ', 'Polka', and 'Marching'.

Teacher B:

Pair 2: Barbara (experimental group 2) and Beth (control goup2) - age 11
Common piano piece: Carmen Mettig, 'O Trenzinho' (The little train).

Teacher C:

Pair 4: Danny (experimental group 4) and Dennis (control goup4) - age 11
Common piano piece: Martha Mier, 'Sneaky Business'.

The pilot study was accomplished in five weeks. The baseline was established in the first week, in just one piano lesson in which pre-tests were taken. The experimental

period lasted for the next four weeks. Each one of the four children in the experimental group had Alexander lessons (30 minutes per lesson approximately), and only the third lesson was recorded. Ideally, the pupils would have had Alexander lessons before going to their piano lessons. However, due to the Alexander teacher's availability, these lessons were given on another day. In order to optimise the effects of the Alexander lessons, the researcher had to establish 'periods of Alexander practice'. They took place in a separate room before the piano lessons, lasted between fifteen and twenty minutes, and were based on being in the semi-supine position and sitting down on a chair, reproducing the typical procedures adopted by the Alexander teacher. The researcher did not 'put hands on' pupils, just oriented their practice.

The 'periods of Alexander practice' created a further problem. Piano teachers would notice that some pupils were taken out of the piano lessons, and would discover who belonged to the experimental and control groups. Besides, pupils in the control group would be unhappy if they did not receive a 'special treatment' as their colleagues did. In order to avoid such troubles, a period of special practice was also established for the control group. Together with the researcher, they started an investigation of mythology, which did not involve any musical or body activity. The 'sessions on mythology' included reading and interpreting myths, comparing myths from different cultures, watching films and looking at pictures related to the topic.

The pupils in the experimental group completed two little questionnaires on the effects of the Alexander Technique on their lives and their playing. The control group was not requested to complete any questionnaire. The Alexander teacher, the piano teachers and the researcher completed the teachers' observations forms weekly. At the end of the study, piano teachers watched the pre-and post-tests, providing oral observations on pupils' changes. An independent panel of piano and music teachers, formed by five teachers, blinded to the research methods and pupils' conditions also saw the tests and provided oral observations. Pupils' questionnaires and the teachers' written and oral observations were transcribed into English by the researcher.

The data obtained from the pilot study was analysed according to steps similar to the ones adopted in the main study. But the presentation of the data was done in a different way, focussing on the physical, attitudinal, and performing difficulties shown by the pupils instead of reporting the initial conditions and subsequent changes for each pupil separately, and placing pupils into categories of changes (evident changes, absence of changes, and so on). Summary-tables on pupils' difficulties and changes will not be offered; instead the comments provided by the observers will be followed by their codenames as highlighted in italics below:

- The participant observers: piano pupils, who were given *codenames*; the piano *teachers A, B*, and *C*; the *Alexander teacher*; and the *researcher*.
- The independent observers: the panel of piano *teachers A, B,* and *C*; the musicians' panel members, *musicians A, B, C, D*, and *E*.

C.2 Looking for physical changes in each pupil

The following categories of physical problems were observed in the pupils: trunk collapse and restricted view of the keyboard, collapse of the arc of the hands (knuckles), excessive tension, and excessive movement.

C.2.1 Trunk collapse and restricted view of the keyboard

Two pupils in the experimental group and two pupils in the control group presented postural problems: Ann (experimental group 1), Danny (experimental group 4). Amanda (control group 1) and Beth (control group 2).

Ann (experimental group 1) had a strong tendency to collapse and compress her chest giving the impression that she was 'immersing' on the keyboard (researcher, baseline

period and piano lesson 1). She also presented lack of muscle tone. As her head was 'back and down', she was frequently looking downwards and had a restricted view of the keyboard and score (researcher, baseline, piano lesson 1). Danny (experimental group 4) also presented back collapse. Piano teacher C wrote that 'the pupil has always had a tendency to sit 'on his back', which creates difficulties in the positioning of arms and hands, and in sound production' (baseline period and piano lesson 1).

Ann (experimental group 1) and Danny (experimental group 4) changed throughout the experiment. Ann changed slowly, improving her posture step by step. Her back collapse decreased and her general posture was more 'up' (piano lesson 2). The immersion on the keyboard disappeared almost completely (piano lesson 3), and her sitting position became good (piano lesson 4). Musician D declared that 'her body posture changed, she was more present; it seems that her shoulders are more opened'. Musician E endorsed this opinion: 'I think her posture at the keyboard changed, as well as her body as a whole'. Teachers A and B (group discussion) also recognised changes in Ann's posture. Ann also improved her previously restricted view of the keyboard (researcher, piano lessons 2, 3, and 4; teacher A, group discussion).

Danny's (experimental group 4) postural changes were also noticeable. He reduced his back collapse whilst playing, and his sitting position became much better and more elegant (researcher, piano lessons 2, 3, and 4). Teacher C wrote:

> In [piano lesson 1] I noticed that he was sitting in a better way, more balanced and elegant. Once more it was possible to notice changes in the pupil's posture. The pupil seems to be well supported on the chair; his feet are firm on the floor, and his hands are firmer (piano lesson 2).

However, occasionally his back collapsed again during performance, as if he were returning to his old habits.

Amanda (control group 1) had a general good posture, but she tended to slightly collapse her back, as if she were 'giving up'; she also suffered from a restricted view of the keyboard (Researcher, baseline, piano lessons). A more complex situation can be attributed to Beth (control group 2), who presented a strong back collapse (teacher A, researcher - baseline period and piano lessons). In the group discussion, Teacher A reinforced this point, saying that:

> Beth is a very talented girl, her hands are very good and relaxed, but she has a problem...[she demonstrates the position of the body, collapsing the back]. She is similar to her father. She collapses her back and creates a lordosis like her father [her father is a music teacher who works in this school, so he is well known by all the teachers].

The trunk collapse peculiar to both Amanda (control group 1) and Beth (control group 2), persisted in all piano lessons.

C.2.2 Collapse of the arc of the hands (knuckles)

Carla (experimental group 3), Amanda (control group 1), Beth (control group 2), and Dennis (control group 4).

Carla (experimental group 3) was the only pupil in the experimental group who presented collapse of the knuckles of the hands (teacher B, piano lesson 2; researcher, piano lessons 1 and 3). Three pupils in the control group also presented collapse of the knuckles of the hands: Amanda (control group 1), Beth (control group 2), and Dennis (control group 4). 'Amanda's hands don't present an arc' (teacher C, group discussion). Musician A said that her hands 'did not have what we imagine as a good position to play the piano'. Similarly, Beth used to collapse her knuckles (researcher, baseline period and piano lesson 3). Dennis also presented 'fragility in his knuckles; he was not always able to keep a good functional position of the hands' (teacher C,

piano lesson 1). Besides, his hands were a 'little bit flaccid' (teacher C, piano lessons 2 and 3). The collapse of knuckles presented by these pupils did not change throughout the experiment.

C.2.3 Excessive tension

Ann (experimental group 1) was the pupil who presented a generalised level of tension. She had excessive tension in her arms and wrists and pelvic joints (researcher, baseline period and piano lesson 1). The Alexander teacher wrote that 'her legs and neck were stiff. Her toes were lifted and stayed rigid' (Alexander lesson 2). Ann herself recognised some tense areas in her body - neck and back of the neck; pelvic joints, front and back (Questionnaire 2). Throughout the experiment, Ann's level of tension decreased considerably; at the end of the experiment, apart from a slight tension in her left hand, she seemed to be quite relaxed (teacher A, piano lessons 3 and 4; researcher, piano lessons 2, 3, and 4). The Alexander teacher pointed out that 'the pupil allowed me to move her arms without stiffening them; her whole body relaxed and she achieved serenity' (Alexander lesson 4).

Barbara (experimental group 2) also presented tension in her shoulders, thumbs, and especially in her hip joints (researcher, baseline period). Barbara complained that her neck and knees were tense. But in the piano and Alexander lessons, her levels of tension decreased (Alexander teachers; researcher). Teacher A endorsed this impression: 'Barbara's arms are looser, especially her axils' (piano lesson 1); 'her arms are less tense' (piano lesson 3).

Carla (experimental group 3) presented fixation in her arms, hands, thumbs, legs, and hip joints (researcher, baseline period). Teacher B also wrote that 'she presents tension in her hands which is especially noticeable when she plays difficult rhythmic passages, when the passing of the thumb is involved, or when unusual fingering is

required' (baseline period). Carla herself affirmed that her neck (in the basis of the neck - 7th vertebra), pelvic joints (both sides), and elbows (internal parts), were the tensest parts on her body. In the second Alexander lesson, the Alexander teacher wrote that:

> Her head was much looser...she learned to release her neck so that her head could go "up". Her arms are much, much looser and she was able to be quiet on the table. Her legs at the hip joints were more difficult to loosen. But in general the whole body was looser than the first time.

And in the fourth Alexander lesson, the Alexander teacher wrote that 'the freedom of her head was very obvious'. Teacher B found that Barbara 'was completely relaxed' (piano lesson 4). Teacher A and musician C pointed out that she was more relaxed in the post-test performance (group discussion).

Danny (experimental group 4) also presented some tense areas in his body: neck, hands, fingers (especially thumbs), and hip joints (Alexander teacher, Alexander lessons 1 and 2; researcher, baseline period). The pupil himself did not recognise any tension in these areas (questionnaire 2). In the piano and Alexander lessons, Danny's level of tension decreased (Alexander teacher; researcher).

The pupils who formed the control group also presented some specific areas of tension. Although Amanda (control group 1) seemed to have good flexibility, she presented tension in her shoulders, wrists, and fingers, especially thumbs. In the third piano lesson, Amanda complained that her left wrist was aching whilst playing the third Kabalevsky piece. Teacher A wrote that Amanda felt 'discomfort' in her left wrist (piano lesson 3). This happened again in the fourth piano lesson.

C.2.4 Excessive movement

Barbara (experimental group 2) tended to move her hands more than necessary when playing the piano (researcher, baseline period, piano lesson 1, 2, 3). In piano lesson 4, her movements became more economical. In the pre-test performance Barbara was swinging her body; in the post-test performance, she was 'jumping less' (musicians C and E).

Excessive movements were also present in Carla (experimental group 3), as she moved her hands too much, especially when playing repeated chords (researcher, baseline period). In the subsequent piano lessons, especially in lesson 4, this excess disappeared. Teacher B stated that Carla 'was completely relaxed and making the right movements' (piano lesson 4).

Excessive movements of wrists, hands and arms also appeared in Dennis (control group 4) (researcher/baseline). His wrists were really flexible, but as musician D stated, Dennis was 'moving his wrists too much', which made it difficult for him to develop independence of fingers and a vigorous quality of touch. Teacher C complained that his playing was 'a little bit flaccid', meaning that his touch was fragile (piano lessons 2 and 4). This problem presented by Dennis did not change much throughout the experiment. He still presented excessive wrist movements in his post-test performance.

C.3 Looking for attitudinal changes in each pupil

The following categories of attitudinal difficulties were observed in the pupils: high levels of anxiety and distraction.

C.3.1 High levels of anxiety

Cynthia (control group 3) seemed to be anxious in the piano lessons; she was the only pupil who felt uncomfortable with the video-camera, asking the researcher to postpone the recording of her pre-test performance. She played the piece several times compulsively before allowing the researcher to video-record her performance. Teacher B wrote that Cynthia was 'impatient when learning new pieces, or when she needed to repeat something; she felt irritated when she was not able to play the correct notes (baseline period, piano lessons 1 and 2). In the piano lessons 3 and 4, Cynthia was calmer, but in her post-test performance, she still presented the same tendency to play the piece compulsively several times before the recording.

Traces of agitation and anxiety were also noticed in Carla (experimental group 3); but her anxiety decreased during the experiment. According to teacher B, Carla was excited because of partaking in the research: 'she was agitated for the reason that she had a 'secret' with the researcher [the periods of Alexander practice] and also because she had a new piece to learn' (piano lesson 1). Dealing with a new situation made this pupil excited and agitated. However, Carla became 'quite calm' in piano lesson 2; 'concentrated and calm in piano lesson 3; and finally in lesson 4, 'she was really calm, and this was reflected positively in all aspects of her posture and her playing' (teacher B).

C.3.2 Distraction

Barbara (control group 2) presented signs of distraction. She could be inattentive (teacher A, baseline period) and slightly distant (researcher, piano lessons 1, 3 and 4). Similarly, Danny (experimental group 4) presented some distraction, but only in the fourth, final piano lesson. Teacher C pointed out that 'the pupil was quite distracted, looking at the video-camera many times'. The level of distraction presented by both

Barbara and Danny was not significant enough to interfere with their process of learning the instrument. The piano teachers, the musicians, and the researcher agreed that concentration was not a real problem for the pupils who participated in this study. Usually, the teachers rated the pupils' levels of concentration between 'good' and 'very good', and eventually 'more or less' for Barbara (control group 2).

C.4 Looking for changes in performance in each pupil

The following difficulties in performance were observed in the pupils: bad tone quality, rhythmical difficulties, bad execution of dynamics, and other specific musical difficulties.

C.4.1 Bad tone quality

Cynthia (control group 3) presented shallow tone quality. Teacher B wrote that Cynthia 'has tense shoulders; this leads to loss of weight and for this reason her tone quality becomes a little shallow' (baseline period, piano lesson 2). In piano lessons 3 and 4, Teacher B noticed improvement in Cynthia's tone quality.

Carla (experimental group 3) also presented shallow tone quality, due to bad posture of hands (teacher B, piano lessons 1 and 2). But later, Teacher B found that her hand position was very good, positively influencing the quality of her sound (piano lessons 3 and 4). Musician B and C, and the researcher also noticed Carla' improvements in Carla's tone quality. In the post-test performance, her 'sound was beautiful', said musician B.

C.4.2 Rhythmic difficulties

'Ann (experimental group 1) tends to anticipate the rhythmic duration. She shortens the long duration very frequently' (teacher A, piano lesson 2). Musician B noticed a similar problem saying that 'she always anticipates the rhythm slightly. She doesn't have that "internal space"'. But in the same piano lesson 2, and in the two subsequent lessons, teacher A noticed some changes in Ann's ability to control rhythm: 'for the first time she was able to play the rhythm without anticipating'. Another pupil in the experimental group, Danny (experimental group 4), 'did not have great facility in playing rhythmic structures precisely' (teacher C, baseline period), but he was able to control the rhythm better in piano lesson 4.

Cynthia (control group 3) used to accelerate the rhythm slightly (researcher, piano lessons 2, 3 and 4), but no evidence of improvement in rhythmic control was noticed during the experiment.

C.4.3 Bad execution of dynamics

Barbara (experimental group 2) produced a very weak dynamic range, not being able to play *f* (teacher A and researcher, baseline period). However, her ability to play loudly improved considerably in the subsequent piano lessons; her sound became stronger and consistent (teacher A and researcher, piano lessons 2, 3, and 4).

C.4.4. Other specific musical difficulties

The participants indicated other specific musical difficulties presented by individual pupils. For instance Danny (experimental group 4) had difficulties in moving his hands at the keyboard, according to Teacher C. Musician B noticed the same

difficulty in Ann (experimental group 1), who also seemed to have poor hand coordination (teacher A). Excessive finger pressure on the keyboard was observed in Beth (control group 2) and Barbara (experimental group 2) (researcher). Additionally, Barbara had fragile fingers (teacher A), and bad finger control (researcher). Finally, Dennis (control group 4) suffered from tiredness (teacher C, researcher, and the pupil himself), and Carla (experimental group 3) presented a constant tendency to make mistakes, playing the wrong notes (researcher).

C.5 Comparing the most significant changes in pupils within pairs

This section compares the pupils within pairs, and is intended to show that the Alexander Technique had a positive impact on the pupils in the experimental group.

C.5.1 Pair 1: Ann (experimental group 1) and Amanda (control group 1)

During the pilot study, Amanda's (control group 1) performance improved much more than that of her peer (Ann, experimental group 1), according to many observers. The members of the panel of musicians put it thus:

> *Musician B:* [Amanda] has improved more than the first one [Ann, experimental group 1]. Yes, this child was more confident about playing.

> *Musician A:* In [Amanda's] post-test performance the technical aspect was improved, her hand position as well. She had some lack of memory, but it was more lack of memory than lack of preparation to get to the right place at the keyboard. And she improved musically as well, with some sophistication. It seems that she was less tense and showed more maturity in her playing, more

than the previous pupil [Ann, experimental group 1]. She presented a better development, she seemed to be more independent of her teacher.

In the group discussion, the piano teachers endorsed this opinion:

Teacher C: Amanda's (control group 1) playing is more fluent...I noticed that her performance improved more than Ann's (experimental group 1). Ann's hands are more well formed, but in musical terms Amanda is better.

Teacher A: Amanda was able to do things that Ann had difficulties in doing articulation, linking two chords [legato]. In terms of phrasing, she improved more than Ann. She has no rhythmical difficulties, some indecision in her playing occurs because of lack of practice. On the other hand, even if Ann practises, she will have difficulty in keeping the pulse.

Teacher A, who taught both pupils expected that Amanda (control group 1) would improve more that Ann (experimental group 1), given that she had natural gifts and less difficulties than her peer. However, Teacher A seemed to be delighted with the rhythmic improvements made by Ann, as the quotation below illustrates:

Ann used to have a rhythmic difficulty. I've rarely seen this level of difficulty. She anticipated the pulse. She was always anticipating...To me, what was more astonishing was the way her hands were resting [on the keyboard]....and the consequence of this...she must be sitting better, more opened [she demonstrates, opening the arms, chest and eyes]. So she was able to overcome her rhythmic difficulties and her anxiety. I think her tendency to anticipate the rhythm is connect with her anxiety and tension. In her case, this is what amazed me the most. In the post-test performance, she was able to keep the pulse and the rhythmic fluency almost all the time.

C.5.2 Pair 2: Barbara (experimental group 2) and Beth (control group 2)

The members of the panel of musicians did not notice evident differences between Barbara's (experimental group 2) pre-and pos-test performances. They pointed out some of her qualities: she used her hands in a natural way, had good rhythmic 'feeling', and was able to communicate her musical understanding of the piece to listeners. Typical comments by the musicians were:

> *Musician E*: She has an involvement with the instrument. She has something that belongs to her. She breathes together with the pulse, after each musical phrase.
>
> *Musician B*: Yes, she breathes with the music.

Barbara's piano teacher expected her to improve her performance, as 'she is a very talented girl; her hands are good and relaxed' (teacher A, group discussion). Although so musical, Barbara presented a specific problem, which her piano teacher could not solve: difficulty in playing loud sounds (*f*, *ff*). In the group discussion, Teacher A offered evidence of her enthusiasm regarding Barbara's improvement in this specific aspect:

> What amazed me the most was the Barbara's improvements in terms of intensity of sound. [In the post-test] she does not make an effort to play. I think she used to play only with their fingers. It is impressive, now she can play f, but she was not able to do so before [pre-test performance]. Her maximum intensity was mf, perhaps less. This change was something that called my attention.

Musician E's comment endorses the view presented above

> This pupil has a good tone quality for her age and small size!

C.5.3 Pair 3: Carla (experimental group 3) and Cynthia (control group 3)

Cynthia (control group 3) did not present evident improvements. Her biggest difficulties were related to excessive tension and anxiety. Teacher B wrote that she presented tension in her shoulders and hands (baseline period, piano lessons 1 and 2). 'Her tension leads to loss of weight on her hands and worsens her tone quality, which becomes shallow' (teacher B, piano lesson 2). Teacher B defined the pupil as being 'excessively and constantly tense' and teacher A observed that Cynthia was compressing her arms and chest, and used to play only with fingers (group discussion). After looking at Cynthia pre-and post-tests, the panel of musicians made the following comments:

> *Musician C*: It's funny, it seems that the [pre-test] performance was better than the [pos-test] performance!
>
> *Musician B*: I feel the same.
>
> *Musician A*: I could not see any difference. I have the impression that she learns things and it is done...she crystallises
>
> *Musician E*: She stagnates...freezes...
>
> *Musician A:* Yes, she freezes and then, you can have one, two, or five weeks, and it will be the same…
>
> *Musician E*: When she was playing the [pre-test], she was really rigid, her head and shoulders. She was prepared to play, prepared to go to war! In the [post-test] she started very tranquil, the head was very relaxed; her body was more integrated. Then her body started becoming rigid again.

On the other hand, Carla (experimental group 3) did not present great difficulties in playing the piano. Improvements were subtle and difficult to notice. Nonetheless, according to the members of the panel of piano teachers,

Teacher C: I think there was an improvement...I saw a great difference.

Teacher A: Yes, there was a difference. Her hands were more relaxed and rested, she was more opened [the teacher demonstrates, opening her arms, suggesting that Carla released her eyes and chest].

Teacher C: Her hands were well formed. At the beginning, I think she was slightly like that, wasn't she? [teacher C demonstrates, collapsing her trunk]. In the [post-test], her body was more erect. There was better continuity and better musical understanding.

Teacher B: Yes, there was a difference...

Teacher A: The second time [post-test] was better...

Teacher B: She breathes...[the teacher was referring to phrasing articulation]. There is a contrast between this pupil [Carla] and the other one [Cynthia, control group 3].

Musicians D and E considered Carla to be more released in the post-test performance. Her tone quality was regarded as being 'much better' and 'beautiful' by musicians C and D. To musician D, Carla was the pupil who was able to make a more clear 'sound contrast' (dynamic contrasts).

C.5.4 Pair 4: Danny (experimental group 4) and Dennis (control group 4)

Danny's (experimental group 4) usual posture at the keyboard disturbed teacher C; she considered that his back collapse and bad sitting position 'created problems for the positioning of his arms and hands, and also for his sound production' (piano lesson 1). In the second piano lesson, teacher C came to talk to the researcher with a funny expression on her face: 'well, now I know who is having the Alexander lessons. It is Danny for sure! He has changed his posture up side down! You cannot hide it

from me any more, I know, I know!' Watching Danny's post-test performance, musician E also noticed his postural improvement.

Danny (experimental group 4) and Dennis (control group 4) had improvements in performance, as their piano teacher seemed expect. Throughout the experiment, their teacher expressed her satisfaction with both pupils. Teacher A (group discussion) said that both pupils made similar progress because

> ...they are quite similar to each other...I think that Danny was collapsed in the [pre-test] performance, whilst in the [post-test] he was much more supported on the chair, without collapsing his back. The first performance was good, but if his sitting position is improved, his achievement will be much better.

C.6 Possible reasons why pupils in the experimental group had physical, attitudinal, and performing improvements

This section presents the possible reasons why the pupils in the experimental group showed physical, attitudinal, and performing improvements. Firstly, it explains why the Alexander Technique may be responsible for some of these changes. Secondly, it presents other possible reasons for the changes shown by these pupils.

C.6.1 How the Alexander Technique helped the pupils in the experimental group

The questionnaires completed by the pupils in the experimental group provided some evidence that the Alexander Technique lessons helped them to improve themselves in

the physical and attitudinal aspects, as well as their performances. Their answers suggest that the Technique helped them as follows: (1) seeing the body as a whole; (2) becoming more grounded; (3) relaxing the body and making less effort to play the instrument; (5) enhancing self-awareness; (6) enhancing self-control; (7) paying attention to the quality of their action; and (8) playing the piano with more facility.

C.6.1.1 Seeing the body as a whole

In the light of the Alexander principles of inhibition and direction, the pupils in the experimental group experienced a new way of using their bodies. They enhanced the connection among the segments of their bodies and became more integrated whilst playing the piano. For instance, in performance, better connections between their backs and arms facilitated the control of tone quality and the execution of specific musical passages. Ann (experimental group 1) illustrates this point:

> The Alexander Technique helped me to see my body as a whole. I could learn and find out more things about my body and this could help me in all situations of my life. When you pay attention to the whole you have more tranquillity. I think of the world as a whole instead of centralising on only one thing. This experience was of very great advantage to my life. I used to get out of Blanca's [the Alexander teacher] lesson thinking differently, for the better (questionnaire 2).

The members of the panel of musicians also offered comments on Ann (experimental group 1) that reinforce the accounts given above:

Musician E: She uses her two arms as a whole in the [post-test] performance. Before, it seems that the right arm belonged to one person and the left to another. She was more integrated with the instrument and she seemed to be only one thing.

Musician A: Her hands started going together.

C.6.1.2 Becoming more grounded

Improving the sense of grounding activated the pupils' support system, and that helped them to go 'up'. Grounding on the seat helped them to improve their sitting position, to avoid back collapse and tiredness, and to improve the use of hands and fingers. To illustrate this point, Teacher A offers the following comment on Barbara (experimental group 2):

> Her fingers and hands seem to be more consistent. There is a great change in the quality and intensity of sound because her pianistic touch is more profound and precise, and her arms are less tense, and also because her sitting position is more restful (piano lesson 2).

C.6.1.3 Relaxing the body and making less effort to play the instrument

Although the Alexander Technique cannot be taken as a relaxation technique, one of the immediate benefits that it provides is the sensation of relaxation. Alexander practitioners reduce tense areas of the body, especially muscles and joints. Danny (experimental group 4) wrote that, during the Alexander lessons, 'you relax the body' (questionnaire 1). Ann (experimental group 1), Barbara (experimental group 2) and Carla (experimental group 3) made similar comments (questionnaires 1 and 2).

Through inhibition, Alexander practitioners also reduce excessive effort in any activity. Barbara (experimental group 2) wrote that she 'learned to get out of bed without making an effort' (questionnaire 1). Carla (experimental group 3) had similar experience, saying that she 'learned to make the minimum possible effort; it is one

more challenge, not to do anything' (questionnaire 1). Ann (experimental group 1) admitted that she learned the same thing (questionnaire 2).

C.6.1.4 Enhancing self-awareness and self-control

The development of self-awareness and the sense of proprioception are typical in Alexander practitioners. The principle of inhibition allows people to stop and observe themselves, so they can choose to use their bodies in better ways. This promotes a new quality of action, which includes greater responsibility concerning the use of ourselves. During the Alexander lessons, the pupils in the experimental group had the opportunity to pay attention to their own bodies, whilst 'doing nothing'. The pupils recognised that they had tense areas in their bodies, except Danny (experimental group 4 - questionnaire 1). Another Alexander principle tells us that our sensory appreciation or proprioception can be easily deceived because of our bad habits of use and levels of bodily tension. Ann (experimental group 1) offered a good example of our misconceptions concerning our own use, writing that:

> I thought that to lie down was to rest. But now I know that when we rest we are still tense. The Alexander Technique helps us to use our consciousness concerning our bodies (questionnaire 2).

As a consequence of a better use of the body as a whole, Alexander practitioners' self-control usually improves. Danny (experimental group 4) wrote that, doing the Alexander work, he could learn to control his body. Ann (experimental group 1) made the same sort of comment (questionnaires 1 and 2).

C.6.1.5. Paying attention at the quality of action

The Alexander principle of 'means-whereby' refers to the best way of doing things with minimum waste of energy. The pupils offered clear comments concerning this issue. Carla (experimental group 3) wrote that:

> I learned to sit correctly, to walk correctly (questionnaire 1). After the Alexander lessons, playing the piano became easier. [The Alexander Technique] facilitates everything. Before [the Alexander lessons] I could not play octaves because the force was not very well distributed. On the keyboard, suddenly, my finger used to move up before the right time, and now this has stopped. The pedal too. The pedal used to come back before the time, or it would go down at the wrong time (questionnaire 2).

Danny (experimental group 4) also stated that he was playing with more facility (questionnaire 2). Finally, Ann (experimental group 1) gave a good idea of what probably happened to her whilst playing the piano after having Alexander lessons:

> I started paying attention to my body, looking beyond the keyboard, and having more control over playing the keyboard. My posture at the piano improved very much; I sit straight and feel the contact with the floor. I make less effort and I have more control. Before, I guessed the musical notes, I could not look at the music score and play [at the same time].

Actually, what the Alexander teacher gave to the experiment group was a chance to experience Alexander principles of inhibition and direction, helping them to stop doing things in their habitual way. These pupils could organise their primary control in a more balanced way, directing the head up and forward, and grounding their feet on the floor, their pelvic area on the seat, and their fingers on the keyboard. Consequently the pupils improved their sitting position, released joints and limbs, become more grounded, focused and calm, and improved some aspects of their piano playing.

If Danny (experimental group 4) tended to collapse his back whilst sitting, he reduced this habit in the Alexander lessons. The pupil started having more support to sustain his sitting position, which was noticeable especially when he put his hands on the keyboard. On these occasions, his sitting position improved immediately, probably because the pupil understood that the keyboard could support his hands; so be became 'four-footed'. This made it easier for him to play the instrument.

Barbara's (experimental group 2) improvement in tone quality can also be attributed to a better use of primary control. Previously she did not use her back to help her in sound production, and her fingers were not strong enough to produce great volume of sound. As she established a better connection between her back and arms, she started using her back whilst playing the instrument, not only her fingers. Besides, whilst playing the instrument, she reduced the excessive hands and arms movements which were made as a compensation for the fragility of her fingers, and inability to produce loud sounds.

Ann (experimental group 1) was the pupil who took most advantage of having Alexander lessons, because she was the one who needed them more. She had a kind of collapse, which seemed to be not only physical, but also psychological. As an intelligent, sensitive, and responsive child, she improved beyond expectations. A better use of primary control helped her to reduce the collapse of her back. Her attitude changed totally, and she could really 'stop' habits such as rhythmic anticipation.

Although Carla (experimental group 3) did not present great postural problems, she also changed considerably. She was able to present a new quality of performance: beautiful quality of sound and more concentration on playing. Her tendency to make mistakes did not change during this study. Such a specific problem needs to be solved within the context of piano lessons, as it is probably due to bad sight-reading and lack of automatisation. The application of Alexander inhibition principles would probably

help Carla to solve this difficulty. This would demand the piano teacher's ability to deal with such principles.

What is clear in all these cases is that, as Alexander states, use constantly influences and affects general functioning, for good or ill. A bad use of ourselves results in unbalanced coordination of the body, and makes it more difficulty for us to carry on our daily activities. If our use is improved through a better balance of our primary control, piano playing will probably become easier, and the quality of piano performance may improve. Additionally, it seems that the Alexander Technique enabled these pupils to assume responsibility over themselves, and solve some specific difficulties alone, without the help of their piano teachers. If so, the Technique may influence positively piano pupils' learning process, and play an important educational role in piano lessons.

C.6.2 Other possible reasons for the pupils' physical, attitudinal, and performing improvements

The data revealed other possible reasons for the changes that happened to the pupils in the experimental group, as follows.

C.6.2.1. The pupils improved their motivation because of the research

All pupils became really excited because of their participation in the research. The piano teachers offered quotations that illustrate this point:

> It seems that the research is motivating Dennis (control group 4) a lot. He is happy because he was "selected" to participate (teacher C, piano lesson 1).

> Barbara (experimental group 2) was extremely motivated with this work (teacher A, piano lesson 1).

Interestingly, excessive motivation created some problems for Carla (experimental group 3), as teacher B (piano lessons 1) emphasises: Carla was quite agitated because she had a 'secret' with the researcher [referring to the periods of Alexander practice]. It seems that pupils' motivation by participating in the research was not necessarily helpful; it is unlikely that it can be responsible for the improvements shown by some pupils.

C.6.2.2 The piano teachers' concern about their pupils' posture

Although the researcher and the piano teachers were not in contact in the piano lessons, it was clear that the presence of the researcher influenced the teachers in some ways. Teacher A seemed to be especially vulnerable to this influence. Many times in the videos the researcher noticed that she was really trying to help her pupils to sit properly. The other teachers also became more observant concerning their pupils' posture. For instance, teacher B constantly requested her pupils to release their shoulders (piano lesson 2).

The panel of musicians also seemed to be especially interested in observing the pupils' posture because of the nature of the research. As musician E gave excessive attention to pupils' posture, musician C said:

> Do you think that the pupils' posture is significant because you know that the researcher deals with body technique? If the researcher recorded my piano lessons, I would take care of posture and arm technique from the beginning to the end …because this happens when we are being observed.

The points presented above might show that the postural changes that happened to some pupils in the experimental group cannot be attributed to the Alexander lessons. However, all piano teachers have recognised their pupils' postural problems in their written feedback (teachers' observation forms), and they could not help the pupils in the control group to improve their posture and levels of tension. For instance, teacher B wrote that Cynthia (control group 3) had tense shoulders, and her tension persisted until the end of the experiment. But Carla (experimental group 3) had lessons with the same piano teacher and was 'completely relaxed' at the end of the experiment (Teacher B, piano lessons 4). It seems that some pupils of the experimental group had physical improvements, and that the pupils of the control group did not improve correspondingly.

C.6.2.3. Maturation

It would be expected that the piano pupils would improve their performances during the experiment, since they were having piano lessons every week, and were probably practising at home. Thus, musical maturation would happen naturally. Musician A highlighted this point:

> Maybe pupils' improvement in performance happened because of time and maturation. Even if the pupil didn't practice at home, she practised during the lesson; so it seems that the pupil was a little more mature, and the piece was more like a whole.

Although to some extent maturation occurred in all pupils, it was not strong enough to explain the unexpected changes that some pupils in the experimental group experienced, as they made specific improvements very quickly. According to members of the panel of musicians, the musical maturation and musical understanding that they expected did not occur for many pupils. Musicians made the following comments:

On Ann's (experimental group 1) post-test performance: I didn't feel that there was the musical maturation that should happen in four weeks (musician B).

On Amanda's (control group 1) performances: It doesn't seem that the music comes from inside the child. It was something that was promoted from outside. "Breathe here!" It is not something that she is doing because she understands that she needs to breathe (musician C).

On Beth's (control group 2) performances: The [post-test] performance occurred four weeks after the [pre-test]? I can't see any difference between the performances. Hardly anything! (musician D). Me neither (musician E).

C.6.2.4 Some piano teachers helped the pupils during the pre-and post-test performances

In the recording of the pre-and post-test, some piano teachers helped their pupils to play the pieces through singing and conducting, interfering with the musical aspect of their pupils' performance, and producing bias. This was especially noticeable in the performances of Barbara (experimental group 2 - teacher A) and Danny (experimental group 4 - teacher C). Looking at Barbara's tests, musician C pointed out that:

> I think the piano teacher should not sing while the pupil is playing. [Looking at the researcher] You have to take the teacher out of the room!

And looking at Danny's post-test performance, musicians C said:

> The piano teacher's approach was decisive. The teacher sings whilst he is playing; this influences her pupils. Although the music might not come from inside, pupils learn.

C.7 Summary of findings

Tables C.1, C.2, and C.3 summarise the findings of this study and compare the physical, attitudinal, and performing changes that occurred to the pupils in both experimental and control groups.

Table C.1 Pilot Study - Summary of physical changes in the pupils in both groups

Experimental group			Control group	
Physical improvements ←		**Initial physical conditions**	→	**Physical improvements**
Experimental 1 Experimental 2 Experimental 4	Experimental 1 Experimental 2 Experimental 4	**Postural problems**	Control 2 Control 4	None
Experimental 1	Experimental 1	**Restrict view of the keyboard**	Control 3	None
Experimental 1 Experimental 2 Experimental 3 Experimental 4	Experimental 1 Experimental 2 Experimental 3 Experimental 4	**Excessive tension**	Control 1 Control 2	None
Experimental 2 Experimental 3	Experimental 2 Experimental 3	**Excessive movements**	Control 4	None
Experimental 1	Experimental 1	**Lack of vitality**	Control 4	None
None	Experimental 2	**Fragile fingers**	None	None
None	None	**Pain**	Control 1	None

Table C.2 Pilot Study - Summary of attitudinal changes in the pupils in both groups

Experimental group			Control group
Attitudinal improvements ←	**Initial attitudinal conditions**	→	**Attitudinal improvements**
None	None	**Lack of attentiveness**	Control 2 Control 3	None
Experimental 1	Experimental 1	**Anxiety**	Control 3	Control 3
None	None	**Self-confidence**	None	None
None	None	**Motivation**	None	None

Table C.3 Pilot Study - Summary of improvements in performance in the pupils in both groups

Experimental group			Control group
Improvements in performance ←	**Initial performing conditions**	→	**Improvements in performance**
Experimental 1 Experimental 2 Experimental 4	Experimental 3	**Problems in the ability to monitor performance**	None	None
Experimental 1 Experimental 2 Experimental 3	Experimental 3	**Bad tone quality**	Control 3	Control 3
Experimental 2	Experimental 2	**Inability to play loud sounds**	Control 3	Control 3
Experimental 1 Experimental 4	Experimental 1 Experimental 4	**Bad control of rhythm**	None	None
None	None	**Bad execution of phrasing**	None	None
Experimental 2	Experimental 2	**Bad execution of dynamics**	None	None

Note that even some pupils who did not present specific problems, showed improvements in specific aspects (see table 3.3, ability to monitor performance and tone quality). The results obtained from this pilot study suggest that the Alexander Technique had positive effects on the pupils' physical and attitudinal aspects, as well as on their piano performance. However, the short duration of the study makes it difficult for us to establish clear correlations between the Alexander Technique lessons and the pupils' improvements in performance.

Conclusion

The pilot study confirmed the efficacy of the methodological and investigator triangulation. Some problems and limitations of the study were also identified, such as the bad quality of vide-recording, the short duration of the baseline period, and the piano teachers' presence near the pupils during the pre-and post-tests recordings. The fact that pupils in the control group did not give accounts of the effects of the 'mythology sessions' on their piano lessons was a deficiency, as such accounts could reveal unexpected variables that the pilot study did not consider. These mistakes were avoided in the main study. As the researcher suspected that very young children might not be mature enough to engage in research which demands children's extra time, older children were included in the main study, as we shall see soon. In addition, more pupils, participant observers, and independent observers were invited to participate in the main study. Finally and more importantly, the pilot study revealed the difficulties of establishing clear boundaries between the Alexander experience and the experience of studying the piano, as they tend to be mixed up within the piano lesson context. This justified the adoption for the criteria of observation with sub-criteria, which helped the researcher to separate the two areas in the process of data analysis, and understand the impact of the Technique on pupils' performances. The pilot study also called attention to the fact that improving pupils' musical understanding is a serious pedagogical difficulty for piano teachers to deal with. This and the points raised above need to be addressed and deepened in the main empirical study for this thesis.